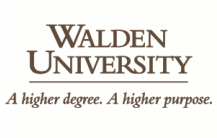

2016

Strategies to Retain Employees in Clinical Laboratories

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This is to certify that the doctoral study by

Amber Phipps

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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2016

Abstract

Strategies to Retain Employees in Clinical Laboratories

by

Amber R. Phipps

MBA, Webster University, 2008

BS, Missouri Southern State University, 2004

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

July 2016

Abstract

With 30 million citizens gaining access to U.S. healthcare through the Affordable Care Act by 2016, healthcare managers need preanalytic employees to ensure quality healthcare services can be provided. The purpose of this qualitative single case study explored strategies used to retain preanalytic employees. The target population consisted of 10 clinical laboratory managers in a single community-based clinical laboratory in the mid-southern United States, selected because of prior success in improved employee retention strategies. The conceptual framework grounding this study was the theory of work adjustment. Data triangulation occurred from using semistructured interviews and company documents. All interpretations from the data were subjected to member checking to ensure the trustworthiness of findings. Using the modified van Kaam method for data analysis, 3 themes included increasing employee training to enhance their roles as stakeholders, provide employee recognition and reward programs, and emphasizing to managers the importance of quality patient care. The application of the findings may contribute to social change by providing healthcare managers with new insights and strategies to retain preanalytic employees, reduce organizational costs associated with recruiting, replacing, and training of new employees, and potentially trained staff that provide quality healthcare services to community citizens.

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Dedication

I wish to dedicate this study to my long-standing mentor and best friend Dave, ‘my Michael’, and loving family. I have overcome many challenges, but the pure strength and determination taught by my parents and grandparents made me realize that being defeated is optional. This effort has taken me five long years to complete. It has not been pretty, but you never gave up on me.

To Mom and Dad, the discipline, drive, and work ethic you instilled in me allowed me to recognize that the struggles I face today develop the strength I need for tomorrow. As educators, you taught me the importance of knowledge, and I appreciate all of the activities, sports, and educational programs you sacrificed and prioritized for me at an early age, recognizing those would help develop me for greater opportunities. Dad, I know you wanted this, and this was for you. Mom, you have shown me what grace and strength look like. You are a remarkably strong woman, and I am thankful to have your presence and support, regardless of situations. To my nieces and nephew, Madison, Hannah, and Emmett; you will face struggles in life. Remember you are not alone and to never give up on yourselves. If you want something bad enough, you can and will accomplish your goal. You are my greatest prize, and I love you dearly.

To my Michael, you truly level me out; carefully guiding me during the highs and building me up during the lows. You have accepted me at my strongest yet supported and loved me at my weakest. Your caring words and gentle touch helped me recognize that when things seem to be falling apart, they may be falling into place. Dave, there are not enough words to express my deepest gratitude and love I have for you. You spotted me

out of a crowd and from that moment, you have been my biggest cheerleader. You saw the greatness in me, and you have shared your wisdom, support, and love to ensure I was and remain successful. You are the most genuine person I have ever met, and you opened doors for me that I did not think were possible. You continue to build me up and reinforce the benefits of taking chances. You have recognized this process has been anything but pleasant but reassure me that my best work is yet to come. I promise to continue your legacy.

Acknowledgments

I am a true believer that success is not attributed to one's personal accomplishment, but rather inspiring others to accomplish their dreams. I have been blessed to be surrounded by amazing people who have believed and inspired me to create opportunities. Thank you to my family, friends, co-workers, and fellow service members for your patience and support. It has been a long road, but a sincere thanks and appreciation to my doctoral chair, Dr. Kenneth Gossett. Dr. Gossett made himself available and was willing to take the time to work with me to ensure every question and requirement was addressed. I have viewed our relationship as a true partnership. Thanks for helping me accomplish this life goal.

Surrounding yourself with others who are on the same mission is critical. I appreciate all of my classmates who have graduated and who are still in the program. Your willingness to share lessons learned were valuable to this process. Thank you to my second committee member, Dr. Michael Ewald, and URR, Dr. Carol Ann Faint for their diligence, attention to detail, and thorough reviews. Your expertise and input made the study stronger. Additionally, I would like to thank Dr. Freda Turner for stepping in and helping ensure I met milestones within the program.

My deepest gratitude and thanks to my mentor Brigadier General and Dr. David L. Smalley. I have never had someone believe so much in me. You have the heart of mentor and have spent your life giving back and developing others. You are a true inspiration and extraordinary leader. Thank you for the endless encouragement and

support. I wouldn’t be where I am today without you and you will always be my guiding light and ‘star.’

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Section 1: Foundation of the Study

Employees are essential to organizations, and employee retention strategies are necessary to sustain a quality operation (Marinucci et al., 2013; Shore, 2013). Employee turnover is costly to organizations, requiring managers to recruit, replace, and train new employees (Ratna & Chawla, 2012). Workforce and strategic planning are difficult for organizational leaders who deal with high employee turnover (James & Mathew, 2012), and managers need to understand factors influencing voluntary turnover to reduce costs and increase efficiency (Abii, Ogula, & Rose, 2013; Dinger, Thatcher, Stepina, & Craig, 2012; Mohamed, Singh, Irani, & Darwish, 2013).

Background of the Problem

Adequate staffing in U.S. hospitals has become a roadblock to the efficient operation of clinical laboratories (Slage, 2013). Slage (2013) noted the retention of trained laboratory personnel might prove problematic given the increased demands of the workplace. Business managers in clinical laboratories are experiencing additional threats to the competitive landscape, and need to focus on efficiency to ensure they are providing high-quality laboratory services (Panning, 2014). The increasing U.S. population over age 65 and the newly insured citizens resulting from the requirements of the Patient Protection and Affordable Care Act (PPACA) will require facilities to increase staffing levels for patients to receive timely and proper care (Ghosh, 2013). Healthcare managers could experience increased demand for healthcare services given the approximately 30 million citizens projected to gain access to healthcare coverage by 2016 (Ghosh, 2013).

Researchers have noted that companies losing skilled employees with significant knowledge creates a problem that mangers need to address (Dinger, Thatcher, Stepina, & Craig, 2012). Preanalytic employees, individuals who assist in data or test order requirements in a clinical laboratory, play an important role in the medical laboratory, and turnover can influence service time and a quality operation. Training laboratory employees takes time and additional resources, which can negatively influence financials (Cortelyou-Ward, Ramirez, & Rotarius, 2011). Companies cannot ignore high employee turnover because turnover influences employee morale and relationships (Abii, Ogula, & Rose, 2013). Laboratory managers need to understand factors to why preanalytic employees may be leaving the company to help contain costs and maintain a quality operation.

Recruiting, training, and retaining employees are critical success factors for organizations (Mohamed et al., 2013). Laboratory managers need to understand voluntary employee turnover by recognizing factors related to an employee's length of stay and identifying issues that need to be addressed to minimize turnover. Clinical laboratory managers can use innovative management strategies to deal with workforce shortages and challenges relating to staffing (Cortelyou-Ward, Ramirez, & Rotarius, 2011).

Problem Statement

Staff retention strategies are needed to sustain a quality laboratory program (Marinucci et al., 2013). Slagle (2013) conducted a study of retention strategies of laboratory personnel working in Tennessee hospitals and found that 61 hospitals (86%) had vacancies within their institutions, and that 58 hospital administrators (>81%)

indicated difficulty with recruiting laboratory personnel. The general business problem is a high voluntary employee turnover rate in preanalytic employees within clinical laboratories creates a loss in organizational profitability and productivity. The specific business problem is some clinical laboratory managers have limited workforce strategies to retain trained preanalytic employees.

Purpose Statement

The purpose of this qualitative, exploratory, single-site case study was to identify workforce strategies clinical laboratory managers use to retain trained preanalytic employees. The population for the study included managers who work in a community-based clinical laboratory located in the mid-southern United States. I used semistructured interviews and document reviews as the primary sources of data for the study. The implications for positive social change include the potential to influence business practices by contributing new knowledge for business managers to develop strategies to retain the preanalytic employees and improve their employment opportunities.

Nature of the Study

A qualitative research method allows for the use of open-ended interview questions and the use of varied sources of information such as document reviews (Yin, 2014). The variety of source information helped me identify insights of clinical laboratory managers as they dealt with the operational challenges of retaining trained preanalytical employees. The use of a qualitative research method allowed me to explore why clinical laboratory managers possess limited workforce strategies to retain trained preanalytical employees in clinical laboratories. A quantitative research method did not

suit the needs of the study because I was not testing a theory or hypothesis and not collecting numerical data for statistical testing (Arghode, 2012; Hoare & Hoe, 2013). For the same reasons, I did not use a mixed methods methodology, which allows researchers to integrate qualitative and quantitative techniques into a single study (Covell, Sidani, & Ritchie, 2012).

According to Bernard (2013), qualitative research designs include phenomenology, ethnography, and case studies. The use of a phenomenological design was inappropriate, as the study design would not have allow me to focus on the lived experiences of a particular or common event (Englander, 2012). An ethnography study was likewise not appropriate because the research question did not require the direct observations of the culture of a group of people (Kriyantono, 2012). A case study is an in-depth analysis of people, events, and relationships, bounded by a unifying factor (Denzin, 2012). An exploratory case study design fit the needs of this study because my goal was to understand the phenomena of the participants concerning the effects of high turnover rates of employees and how they create a serious threat to the delivery of quality healthcare services in community-based operations (Cortelyou-Ward et al., 2011).

Research Question

The following question guided the research study: What workforce strategies do clinical laboratory managers use to retain trained preanalytic employees? The overarching research question provided me an opportunity for a deeper inquiry and exploration of the negative influence of high-turnover rates on the business operations of

clinical laboratories. In the next section, I outline the interview questions that I developed to address my primary research question.

Interview Questions

Interview questions for my study helped me obtain detailed information to explore the primary research question. Rubin and Rubin (2012) suggested the use of semistructured interview questions for studies like mine to encourage study participants to share their experiences and knowledge. The open-ended interview questions helped me elicit the insights of clinical laboratory managers as to how they deal with operational challenges of retaining preanalytic employees in the clinical laboratory (Yin, 2014). Study participants who were part of the senior management team in a clinical laboratory responded to each of the following interview questions:

1. What work environment demands influence the preanalytical team and how they may affect their job requirements?
2. How is the role of the preanalytical testing department important in relation to the success of the clinical laboratory?
3. What changes would you as a team member need to make to improve success and retention in the organization?
4. What changes or abilities would enable the preanalytic employees to be more successful?
5. What organizational changes would affect the retention of preanalytic employees?
6. What changes do you see need to take place for the preanalytic employees?

7. What qualities does a preanalytical employee need to enhance quality patient care in the clinical laboratory?
8. If you adjusted the roles in the preanalytic team, how would it affect retention?
9. How could the scope of the preanalytic roles change to strengthen the role and make the job more satisfying?
10. What additional information can you provide about retaining preanalytic employees?

Conceptual Framework

The theory of work adjustment (TWA) is a predictive model originally developed at the University of Minnesota in 1964 by Dawis, England, and Lofquist. The TWA includes a description of the relationships of an individual to their work environment. The TWA focuses on two characteristics of the individual, needs, and skills; and two characteristics of the work environment, task requirements/skills, and reinforcers/ consequences (Dawis, 1980). The individual and environmental interactions result in an individual's satisfaction and an employer's satisfactoriness, ultimately resulting in an employee's increased length of stay within the organization (Dawis, England, & Lofquist, 1964). Satisfactoriness is a term used in the TWA assessing the satisfaction of the employer with an employee's individual performance related to the quality and quantity of completing the work or assigned task (Dawis et al., 1964). I used the TWA in the interview questions to help clinical laboratory managers explore employee retention strategies.

For an individual to stay in a job, there needs to be a balance between satisfactions and dissatisfactions. Without this balance, employees might leave the job. Tenure is the chief indicator of job satisfaction in the TWA (Dawis, 1980). Rather than a silo approach that looks at individual or environmental factors, the TWA includes a description of the values of the person and environment and how these values interconnect (Dawis, 1980).

The TWA framework has been used in numerous studies to investigate or describe the role of fit between a person and environment (Perkmen et al., 2012). Some researchers have extended the TWA and created models to include variables similar to their research design such as (a) retirement, (b) race and socioeconomic status, and (c) sexual orientation relating to job outcomes (Lyons et al., 2014; Velez & Moradi, 2012). A personal-organizational assessment can be useful for organizations to create a workforce strategy and assess an employee's job satisfaction, workplace climate, and turnover intentions (Velez & Moradi, 2012).

Operational Definitions

Employment, retention, and competency of business practice terms can be complex. To facilitate the understanding of the issues addressed in the study, I have included are the following researched-based definitions. In this section, key terms have researched-based definitions.

Affordable Care Act: A U.S. congressional action to extend Medicaid coverage for eligible individuals and increase access to healthcare by providing healthcare insurance at lower costs to uninsured Americans (Shore-Sheppard, 2014).

Dissatisfaction: A condition which can occur when an employee is not satisfied with the employer, and which may result from multiple factors such as pay, job security, flexibility, and relationships within the workplace, which can prompt a search for other employment opportunities or cause turnover (Hom, Mitchell, Lee, & Griffith, 2012; James & Mathew, 2012).

Job quality: An employee's perception of the overall job experience (van der Aa, Bloemer, & Henseler, 2012).

Job satisfaction: Attitudes and beliefs of employees regarding work conditions (Oyewobi, Suleiman, & Muhammad-Jamil, 2012).

Leadership: The ability of a person to influence others to commit or follow the goals of a group (Kaiser, mcGinnes, & Overfield, 2012).

Preanalytic employees: Individuals who assist in data or test order entry, request completion, specimen transport, and specimen receipt in a clinical laboratory (Hammerling, 2012).

Retention: Actions an organization takes to encourage employees to stay and to maximize the period an employee will maintain employment with the organization (Ratna & Chawla, 2012).

Voluntary turnover: Separation from an employer, initiated by the employee (Davis, Trevor, & Feng, 2015).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions reflect knowledge about the phenomenon, which appears to be a fact but is not verifiable (Willig, 2013). I worked from two assumptions in this study. First, because an essential part of the study was the interview process, I assumed participants maintained the integrity of the process by providing honest feedback and directly answering the interview questions. Establishing a secure and safe environment, along with structuring and conducting the interviews in a systematic approach mitigated concerns regarding the integrity of the response from the participants. Additional mitigation efforts I made included active listening, the use semistructured questions for the interview, and engaging the participants with appropriate follow-up questions (Rubin and Rubin, 2012).

My second assumption was that I had the capability to record accurately, code, and analyze the data providing centralized themes. Reducing the risk of errors with these items resulted from a structural and methodical approach prior, during, and after the interview process (Yin, 2014). My use of member checking, as suggested by Marshall and Rossman (2011), allowed participants to confirm answers and correct errors of transcribed interview transcripts.

Limitations

The limitations of a study are weaknesses the researcher does not have control over that can affect the outcome of the study (Kirkwood & Price, 2013). The trustworthiness of findings is a known shortcoming among qualitative researchers

(Marshall & Rossman, 2011). One of the limitations of my study may have been the experience and expertise of senior managers who served as participants. Senior managers might not have had the necessary experience and expertise to provide helpful answers regarding retention of preanalytic employees. A second limitation of this study was the single site, small study sample, and case study analysis, which potentially narrowed the range of opinions and thought processes in the interview question responses. Fusch and Ness (2015) suggested that qualitative studies should have a sample size allowing the investigator to reach saturation without collecting repetitive data. I used member checking to insure that I had enough information for reaching saturation.

I used a purposeful sample of current and knowledgeable managers in the field to help reduce the limitations of the study. The basis for selection of the participants was their experience and job understanding within the scope of preanalytic requirements for the clinical staff who they supervise and manage in the work setting. The conclusion of the qualitative case study might not produce findings, which influence significant changes to the problem of retention of preanalytic employees within the clinical laboratory.

Delimitations

Delimitations are the variables researchers have control over and choose to study (Denzin & Lincoln, 2011). Delimitations of a study include the problem selected for the study, specified population, geographical location, sample size, and single site. The problem selected for the study was to identify workforce strategies clinical laboratory managers use to retain trained preanalytic employees. The population for the study

included managers who work in a community-based clinical laboratory located in the mid-southern United States. Based on the selection of clinical laboratory managers in this high-turnover area, 10 participants was the targeted sample size for this qualitative case study to enable me to achieve data saturation. A single site qualitative case study was the most effective way to explore retention of employment options for the clinical laboratory.

Significance of the Study

Contribution to Business Practice

This study may be valuable to businesses because it identifies the importance of managing turnover for containing cost in the laboratory industry. Turnover within the workforce is costly to organizations and continues to be an increasing problem for organizational managers (Kim, 2012). Organizations benefit from retaining employees because of the competitive advantage associated with their skills, knowledge, and abilities (Shaw, Park, & Kim, 2013). Employee turnover can negatively influence organizations not only with increased costs of replacing, recruiting, and training employees, but also in decreased quality services due to disruptions in continuity and productivity (Buffington, Zqink, & Fink, 2012). Managers might be able to use this data to provide support for business operations in their efforts to provide quality laboratory services and testing. Quality and timely service distinguishes clinical laboratories from one another and is a competitive advantage. By improving retention, clinical laboratory managers in organizations can reduce costs associated with employee turnover, improve operational efficiency, and sustain competitiveness (Ratna & Chawla, 2012).

Managers of companies need to address turnover because losing skilled employees with specific knowledge is disruptive. Managers' understanding of the factors related to employees voluntarily leaving an organization can help contain costs, retention, and manage turnover (Dinger et al., 2012; Mohamed, Singh, Irani, & Darwish, 2013). Understanding specific factors contributing to employee turnover is important, and human resource policies or practices can influence change. Managers who control turnover can create a culture of enhanced retention (Buffington et al., 2012). Retention strategies could be used by clinical laboratory managers to contribute to business practice by retaining preanalytic employees. By addressing turnover, this study might contribute to the effective practice of business.

Implications for Social Change

From a social change perspective, this study might be valuable to clinical laboratory managers. The development of strategies and policies in an organization can help retain employees, and understanding the needs and factors influencing employee retention is important for organizations to help minimize avoidable employee turnover (Kim, 2012). Mohamed et al. (2013) conducted a quantitative study examining human resource (HR) practices regarding behavioral differences in recruiting, training, and retention. Mohamed et al. found that effective and efficient recruitment practices and policies could help select the right fit for potential employees in the organization. By selecting employees who have the right fit can influence tenure and success among the organization.

Quality is a needed driving force within healthcare, and employee turnover causes medical facilities to (a) be short staffed; (b) sustain higher training and overtime costs; and (c) reduces the quality of products or services, potentially leading to a loss of customers (Al-Hussami, Darawad, Saleh, & Hayajneh, 2014). Medical laboratories are essential to patient care (Sertesser, 2012). Identifying behaviors and mitigating ways to reduce voluntary turnover are critical for organizations (Kim, 2012). The cost of care for clinical laboratories has increased in the areas of labor, technology, supply chain, logistics, and innovation at a time when they are receiving decreased reimbursement from government fee schedules and insurance companies (Panning, 2014). Effective retention of preanalytic employees might result in long-term employment and improved quality of patient care.

A Review of the Professional and Academic Literature

The purpose of this literature review is to provide a high-level synopsis of current and previous studies relevant to the problem I examined in this study, namely the retention of trained preanalytic employees. Studies addressing workforce strategies about retention among the laboratory industry are limited. I therefore had to look to other healthcare sectors and to identify overlapping themes.

I have used subheadings to organize the literature review by themes or key items. I begin with a discussion of literature on the conceptual framework of the TWA, and continue with a discussion of how job satisfaction and organizational culture relate to employee turnover. Next, I focus on employee retention strategies, rewards and recognition, training, leadership for retention, and retention management. In subsequent

sections, I address healthcare vacancies, professional development, and medical laboratory errors, and then conclude with a discussion of literature on the PPACA and the influence it has in the healthcare system relating to recruitment and retention of employees. In the literature review, I found that multiple aspects of employee turnover and issues in the healthcare system articulate with an underlying theme of the need of effective workforce strategies to improve retention while meeting the needs of the healthcare industry.

Academic Sources Utilized to Conduct a Review

In this review, I included peer-reviewed articles, scholarly journal articles, books, and website content to substantiate the need for workforce strategies for managers to retain trained employees. I used research databases available from Walden University Library, Stinson Library (U.S. Army Medical Department Center and School, AMEDD C&S), and Google Scholar. I used the Google search engine to categorize and help me discover key terms to use in database searches. I used an RSS feed reader for real-time monitoring of each of these databases as I was working on my research.

The databases I used included Business Source Complete/Premier, ProQuest Central, Thoreau Multiple Database, SAGE full Text Collection, Teacher's Reference Center, and Academic Search Premier. I found the peer-reviewed articles and journals for the study using the following keywords: *employment turnover, retention, laboratory personnel, personnel recruitment, sustainability, training transfer, employee recognition, skills, training costs, healthcare reform, qualitative, human capital theory,* and *theory of work adjustment*. I used a total of 127 references in the study, 86% of which are peer

reviewed and less than 5 years old (see Appendix A). Specifically, in this literature review, I used 74 references, 93% of which are peer reviewed and less than 5 years old. I used Ulrichweb to authenticate peer-reviewed journals.

Table 1

Statistics for References in the Study

Category	*Result*
Total number of references	127
Total number of references published within the last 5 years	113
Total number of peer-reviewed references	117
Total number of peer-reviewed referenced published within the last 5 years	109
Percentage of peer-reviewed references published within the last 5 years	86%

Table 2

Statistics for References in the Literature Review

Category	*Result*
Total number of references	74
Total number of references published within the last 5 years	69
Total number of peer-reviewed references	73
Total number of peer-reviewed referenced published within the last 5 years	69
Percentage of peer-reviewed references published within the last 5 years	93%

Application to the Applied Business Problem

Increased employee turnover rates and workforce shortages are concerns in the healthcare industry (Cortelyou-Ward et al., 2011). The rapid growth and need for medical laboratory services are expanding, and managers need to increase efficiency to ensure the quality of care (Panning, 2014). High employee turnover negatively influences employee morale and managers need to understand what factors influence employees to leave a

company if the want to enhance retention, reduce costs, and increase efficiency (Abii et al., 2013; Dinger et al., 2012; Mohamed et al., 2013).

The purpose of this qualitative study was to identify workforce strategies clinical laboratory managers use to retain trained preanalytic employees. Although qualitative research can be unclear and uncertain, researchers can assess underpinnings of the research question by asking questions to explore the phenomena and use a variety of data sources, providing depth within the topic (Cronin, 2014; Petty, Thomson, & Stew, 2012; Wahyuni, 2012). I chose the TWA as the conceptual framework for the study. The TWA looks at the personal and environmental (P-E) factors that contribute to an employee remaining with a company. The TWA was appropriate for helping me to identify the factors employees attribute to satisfaction in the workplace, resulting in retention. Staff retention strategies remain vital to sustaining quality laboratory programs (Marinucci et al., 2013).

Theory of Work Adjustment

The TWA helps assess the degree of job satisfaction and how this serves as a predictor relating to the likelihood of someone staying in a job (Dawis, 1980). Using a cross-sectional approach, the TWA looks at the individual and environmental factors. Personal factors include an employee's (a) skills, (b) abilities, (c) needs, and (d) values, while environmental factors include workplace required (a) skills, (b) abilities, (c) needs, and (d) values and how these directly relate to job outcomes. According to the TWA, when employees are satisfied with their workplace, then satisfaction will result in tenure (Dawis, 1980).

Work personality has been identified as needs and vocational abilities; whereas, work environment is composed of the constraints necessary to meet job requirements (VanVoorhis & Protivnak, 2012). The work environment includes all factors surrounding the employee; the physical environment, social aspects, and interpersonal and organizational relationships (Dawis, 1980). Employees who have a good fit between work personality and work environment tend to be satisfied in the workplace (Dawis, 1980). Various studies have used the TWA framework to investigate or describe the role of fit between a person and environment (Lyons, Velez, Mehta, & Neill, 2014; Perkmen et al., 2012; Velez & Moradi, 2012). Satisfaction is the key indicator of work adjustment, meaning the employee is satisfied with the work that they do and there is a good fit between themselves and the work environment (Dawis, 1980).

According to the TWA, to make a satisfactory adjustment to work a person must have the skills necessary to adequately meet the requirements of the work environment (Dawis, 1980). These basic skills are considered *abilities* in the TWA. Organizations that use job descriptions to create personnel assessments can help measure the aptitude of potential employees and assess them for the required skill. An organization considers an employee satisfactory if they have the skills needed to perform assigned tasks, known as *requirements* in the TWA (Dawis, 1980).

Each employee is different, and the types of needs (reinforcers) will vary (VanVoorhis & Protivnak, 2012). Dawis (1980) referred to reinforcers as environmental conditions reflecting an increased likelihood of an employee being satisfied. Employee needs are organized around six values: (a) safety, (b) autonomy, (c) comfort, (d) altruism,

(e) achievement, and (f) status (VanVoorhis & Protivnak, 2012). Safety provides predictable and stable workplace conditions. When an employee has autonomy, they have an increased level of control and display initiative within the workplace. An employee can feel comfort if there are minimal levels of stress, and altruism creates an environment of service to others. A sense of achievement occurs when an employee can accomplish a task, while status can provide the recognition or prestige they desire (VanVoorhis & Protivnak, 2012). Lyons, Velez, Mehta, and Neill (2014) tested two competing models of the TWA, exploring a relevant cultural variable in the TWA model with African American employees who were economically distressed. Lyons et al.'s (2014) quantitative study analyzed four variables: (a) person-organization fit, (b) racial climate, (c) job satisfaction, and (d) turnover intentions among 100 African Americans across many industries. Lyons et al. (2014) suggested that the racial climate is an important factor for employers to recognize within the workplaces of economically distressed African Americans. These employees might *disidentify* with the company, resulting in decreased job functioning since their perceived fit between themselves and the organization is mediated by a negative cultural experience. Lyons et al. (2014) identified other possible relevant factors, including (a) salary, (b) job security, and (c) satisfaction of the job.

Similar to Lyons et al. (2014), Velez and Moradi (2012) used an extension of the TWA conceptual framework to look at workplace contextual variables and job outcomes. To assess how the variables related to one another, Velez and Moradi (2012) looked at five variables: (a) workplace heterosexist discrimination, (b) lesbian, gay, and bisexual

(LGB) supportive climates; (c) person-organization fit, (d) job satisfaction, and (e) turnover intentions. Velez and Moradi analyzed data from 326 LGB employees with sample characteristics of 79% reporting full-time employment, 80% reporting Caucasian ethnicity, and 50% reporting holding a professional degree (i.e. master's, doctoral).

Although Lyons et al. (2014) and Velez and Moradi (2012) studied different variables (race and socioeconomic status vs. sexual orientation), results of both studies were comparable about the relationship between workplace climate, job satisfaction, and turnover intentions. The clinical implication of the Lyons et al. (2014) study was that the TWA is relevant among African Americans who are economically distressed and who work for organizations with moderately supportive racial climates. However, employers offering little to no support of the racial climate might compromise the ability to predict employee satisfaction and tenure.

Paralleling these findings, Velez and Moradi (2012) concluded that person-organization fit might link employees' perceptions of support from an organizational climate to job satisfaction and turnover intention. Furthermore, Velez and Moradi (2012) found that identifying management strategies could improve workplace experiences for employees. A limitation of Velez and Moradi's (2012) and Lyons et al.'s (2014) study designs was their cross-sectional analysis. Lyons et al. (2014) used data from multiple industries, assessing actual workplace tenure rather than turnover intentions. This might provide a comprehensive assessment of an organization dealing with turnover among a diverse work population with decreased socioeconomic status.

An exploratory qualitative study using interviews with 10 Latino immigrants described work experiences between the United States and their home countries was conducted by Eggerth & Flynn (2012). Although these researchers used a different methodology than Lyons et al. (2014) and Velez and Moradi (2012), TWA was used as the framework to assess segments of a population regarding work experiences. The need for employment counselors working with Latino immigrants to use a value-related assessment and strategy to help individuals find an appropriate career was addressed in a study by VanVoorhis and Protivnak (2012).

An assessment of a P-E fit among potential employees or candidates examines the characteristics of the person in regards to the demands of the environment (VanVoorhis & Protivnak, 2012). In a similar fashion, Duffy and Autin (2013) reported employment counselors should also explore an individual's aspirations for a specific type of job, relating to a specific type of work environment. When an individual can identify and explain aspects of what they want out a job, this information can help align with occupations and meaningfulness, resulting in a career decision making (Duffy & Autin, 2013).

Turnover

Employee turnover can cause financial burdens to organizations as associated costs incur with recruitment, replacement, and training costs (Ratna & Chawla, 2012). Davis (2013) conducted a phenomenological study, exploring lived experiences and perceptions, about employee turnover among customer service agents. The foundation to Davis' study incorporated the Herzberg 2-factor theory, examining factors relating to

turnover and retention and exploring causes of job satisfaction and dissatisfaction. Two primary themes from the research noted employee compensation and strategies to increase employee morale lead to improved retention and job satisfaction among employees. Social implications from Davis helps organizations understand the need for strategic retention strategies, ultimately decreasing turnover; minimize challenges among retention, and increase morale.

Gialusi and Coetzer (2013) conducted an exploratory study, conducting semistructured interviews with 15 participants, to investigate voluntary turnover and retention in small businesses. Themes in Gialuisi and Coetzer's (2013) study as to why employees left their employment included: (a) conflict in working relationships, (b) lack of career progression opportunities, and (c) unstructured work structure (leading to overload and stress). Characteristics reflective of improved retention included flat management structures and variety among responsibilities or job duties. Strategies Gialuisi and Coetzer recommended included (a) helping new employees 'fit in' with other, (b) empowering employees for growth or fulfillment opportunities, and (c) recognition of financial or non-financial benefits.

James and Mathew (2012) conducted a quantitative study using the convenience sampling method to collect data from a questionnaire, sampling IT firms located in Bangalore (50 companies, 225 responses, and 300 employees). Variables investigated in their study included retention strategies, welfare benefits, organizational culture, and personal satisfaction. Similar to Davis (2013), James and Mathew concluded HR managers need to identify strategies relevant to employee's perception to retain star

performers, minimizing employee turnover. Loyalty is no longer a trait used by an employer and employee relationship. Employee turnover and attrition are on the rise causing a big challenge among human resources and human capital (Samson, 2013).

Batt and Colvin (2011) examined the relationship between performance and turnover and how the two relate to one another in work organizations. A critical item for both organizations and employees about employment relations is turnover (Batt & Colvin, 2011). Regardless if the employee separation resulted from termination or voluntary choice, the recruiting and training costs to the organization remain the same (Batt & Colvin). Businesses endure significant costs with operational disruptions and human capital replacement (Batt & Colvin). The cost of unemployment in the U.S. is at an all-time high as of 2014, creating an additional shortage in the laboratory workforce (Slagle, 2013). Employee retention is a global concern, as organizations need human assets essential to stay competitive, reshaping businesses, and contributing to profitability (Shore, 2013). Other downfalls incorporated to turnover includes downtime, productivity requirements, overtime, and reduced productivity until the new employee is fully trained or proficient in tasks. A limitation to Batt and Colvin's study was a collection of data based on management reports from locations.

The employee systems approached by Batt and Colvin (2011) addressed HR practices relating to turnover and performance in a call center. Limitations to their findings include a generalization of an industry and findings based on reports from the general. Other labor markets might differentiate results. Demographics in Batt and Colvin

study primarily comprised of women (70%) who did not have a college education (degree) and low-wage employees.

Employees who work in jobs with scripted, repetitive, and individual tasks (low individual discretion) tend to have increased boredom, stress, and isolation within the workplace (Batt & Colvin, 2011). Batt and Colvin further noted increased dismissals from the workplace occur from employees who have scripted and repetitive jobs because individuals monitored for performance. Some managers in organizations implement performance-enhancing practices, resulting in only short-term responses, to meet the needs of competitive pressures. Increased levels of employee turnover influence productivity and sustainability of organizations. Skill shortage increases with turnover (Batt & Colvin).

Depending on the products or services of a given company, employee turnover can negatively influence organizational processes or minimize production (James & Mathew, 2012). Hancock, Allen, Bosco, McDaniel, and Pierce (2013) had an opposing viewpoint to Batt and Colvin (2011), James and Mathew (2012), and Ratna and Chawla (2012) relating to turnover. Handcock et al. (2013) reported companies do not always have a negative response to performance or profitability with employee turnover. Furthermore, Handcock et al. stated there are benefits associated with turnover and often supersede expense. Wallace and Gaylor (2012) agreed with Handcock et al. reporting turnover does not always affect an organization negatively. Although managers need to be mindful of cost relating to turnover, as it can influence the bottom line (Wallace & Gaylor).

Job Satisfaction. Job satisfaction and retention are important aspects managers need to understand to sustain staff within the healthcare system. According to the TWA, if employees have workplace satisfaction, they tend to stay at their place of employment (Dawis, 1980). Marinucci et al. (2013) developed a survey, administered to 224 laboratorians, to assess job satisfaction and retention in seven countries of Sub-Saharan Africa. A five-point scale facilitated the measurement of each analyzed factor; salary was an exclusion factor within the survey. Results from the survey indicated a lack of professional development was the main cause of employees leaving their previous place of employments, 57% (128 of 224) changed jobs at least once over a 5-year period. Almost 90% of respondents (195 of 224) indicated professional development and training opportunities were the most important factor for workplace satisfaction (Marinucci et al., 2013). The next two categories rated the highest were working environment and working conditions, respectively reported 42% (95 of 224) and 38% (85 of 224). Additionally, only 4% of laboratory professionals reported vacation and time off as most/very important (Marinucci et al.).

Similar to Marincucci's et al. (2013) analysis of factors relating to job satisfaction, Abii et al. (2013) conducted a quantitative study to examine the role employee satisfaction had in employee turnover in the IT industry, examining intrinsic and extrinsic job satisfaction. Furthermore, Abii et al. (2013) looked at the factors influencing employee satisfaction so company leaders can predict turnover trends due to the factors identified. Results from Abii et al. (2013) study indicated job satisfaction had

an influence on IT employee's leaving the organization, but not all job satisfaction factors had the same influence on the employee's decision.

Abii et al. (2013) reported a significance between turnover factors and intrinsic satisfaction factors; linking to working conditions, achievement, advancement, and creativity. Responsibility was the only correlation between extrinsic job satisfaction and employee turnover (Abii et al. 2013). Abii et al. (2013) noted workplace relationships influence an IT employee's decision to leave, and an effective retention strategy is needed for leaders to help create a work environment valuing trust and mutual respect. Recommendations Abii et al. (2013) noted was to examine further turnover intentions of employees with follow-up interviews.

Shortages in the workplace place greater demands on employees and might increase stress and reduce quality workplace relationships; necessary traits for job satisfaction and commitment to the organization (Lu, Barriball, Zhang, & While, 2012). Shin, Taylor, and Seo (2012) found employees who are committed to their jobs do not intend to quit. Lu et al., (2012) conducted a systematic review to address job satisfaction among hospital nurses. Lu et al. (2012) noted job satisfaction is difficult to understand and to be able to identify factors relating to job satisfaction can help develop management interventions.

Furthermore, Lu et al. (2012) noted lower levels of job satisfaction among nurses who experienced unfulfilled expectations. Understanding variables relating to interrelationships are necessary to improve retention of the nursing workforce (Lu et al.,

2012). Leading factors relating to retention noted by Buffington et al. (2012) included job satisfaction, mentorship, and management support and recognition.

Similar to Buffington et al. (2012), Lu et al. (2012) recognized recognition was important and correlated to autonomy, support, and fairness in the workplace. Lan, Okechuku, Zhang, and Cao (2013) investigated how satisfaction in the workplace depends on how employees view their job position, personal beliefs, and values. Findings from Lan et al. (2013) found employees who recognize their work as important and valued have a higher overall job satisfaction compared to those who view their work as a job. Elloy and Patil (2012) findings paralleled with Lan et al. reporting employees who have low-level job satisfaction in the workplace can negatively affect their value and self-worth.

Organizational Culture. Organizational culture defined by Tipu, Ryan, and Fantazy (2012) is the behaviors, ideas, processes, and values organizations use to make decisions and conduct business. Organizational factors and organizational culture can motivate and de-motivate employees resulting in turnover intentions (James & Mathew, 2012). Fifty-five percent of participants in Inabinett and Ballaro's (2014) study stated organizational culture was a key contributor to their job satisfaction and their decision to stay with the company. Consistency in the training of new employees can be expensive and difficult for smaller organizations and Inabinett and Ballaro suggested managers match corporate culture to individual values to increase retention.

Researchers can use the competing values framework (CVF) to assess organizational culture as a predictor of quality improvement implementation (Naranjo-

Valencia et al., 2012). Similar to Tipu et al. (2012), Ovseiko and Buchan (2012) defined organizational culture by the grouping of ideas, values, beliefs, and rules collectively shared by those within the group. Organizational culture drives behaviors and can determine outcomes. Ovseiko and Buchan (2012) conducted a mixed method study using a survey from the U.S. Veterans Affairs Administrations' CVF to build on effective culture development and procedures.

Innovation is a necessary aspect to become a pioneer and maintain a competitive advantage (Naranjo-Valencia et al., 2012). Naranjo-Valencia et al. (2012) conducted a hierarchical multiple regression analysis researching how organizational culture relates to an innovation strategy. Naranjo-Valencia et al. found the adhocracy culture, outlined in the CVF, encouraged innovative approaches whereas hierarchical cultures endorse imitation cultures. The counterproductive nature of overemphasizing one area can cause weakness in other areas (Darvish & Nazari, 2013). Ovseiko and Buchan (2012) and Naranjo-Valencia et al. used CVF as their conceptual framework in their research.

A limitation within Naranjo-Valencia's et al. (2012) study is the data came from only one source for the cross-sectional design. Naranjo-Valencia et al. examination and testing about the relation of organizational culture and innovation orientation help fill gaps in the literature with these variables. Empirical research in organizational culture used CVF as one of the most exhaustive models and frameworks used within organizations (Naranjo-Valencia, 2012). Naranjo-Valencia obtained information through personal interviews with senior CEOs while using a preexisting tested questionnaire.

There are many costs associated with employee turnover and Ladelsky and Catana (2013) reviewed studies addressing internal and external factors related to turnover in the IT sector. An employee's personal alignment to an organization's culture can be a factor relating to retention (Ladelsky & Catana, 2013). Gagnon, Moore, and Shanmuganathan (2014) conducted a quantitative study, administering an online survey (86% completed respondents) across 12 business sectors, looking at the relationship between employee commitment and organizational success. Similar to what Ladelsky and Catana reported regarding organizational culture, Gagnon et al. study findings aimed to help managers with strategic planning relating to increasing an employees' level of commitment.

Employee Retention Strategies

The cost of unemployment in the United States is at an all-time high as of 2014, creating an additional shortage in the laboratory workforce (Slagle, 2013). Employee retention is a global concern, as human assets are an essential component of organizations (Shore, 2013). Ratna and Chawla (2012) stated retention among organizations is more important than the hiring process, helping to maximize and retain top talent, minimizing operational expenses due to turnover. Slagle (2013) conducted a questionnaire for laboratory directors in Tennessee hospitals about recruitment and retention strategies, noting minimal differences regarding urban and rural locations. The response rate of Slagle's survey was 69.6%, and descriptive statistics measured the perception of laboratory administrators. Regarding recruitment, more than half of the directors from the questionnaire agreed on a listing of problems associated with the lack of effectiveness in

recruiting, regardless of geographic location and recommended the following actions: (a) increase awareness of allied health with the public, (b) increase use of word-of-mouth for recruitment, (c) increase targeting of technical and community colleges, and (d) increase recruitment bonuses; (e) improve access to community colleges, (f) improve competitive benefits, (g) enhance effective co-op programs with universities, and (h) enhance online and website marketing ; and (i) improve competitive wage packets and (j) improve emphasis on diversity when recruiting (Slagle, 2013).

Retention strategies remain essential for organizations to help minimize financial challenges related to employee turnover (Ratna & Chawla, 2012). Other surveys noted by Slagle (2013) included studies of laboratory managers revealing strategies for retention and surveys of laboratory professionals. Limitations of the studies include no recognition of geography influence (urban vs. rural). In regard to retention, Slagle (2013) noted (a) relevance of job fit, (b) job security, (c) interpersonal relationships, (d) job design, (e) clear job descriptions, (f) adequate orientation, (g) perceived self-value of employees, (h) sufficient job training, (i) employee decision-making power, and (j) departmental decision-making power as strategies for retention.

Retention strategies are necessary to retain staff to sustain a quality laboratory program (Marinucci et al., 2013). Shore (2013) conducted an exploratory case study addressing retention strategies and challenges among a high-growth company. The research question proposed by Shore pertained to can lessons learned in the West be used in high-growth companies in South Korea to improve retention strategies. Interviews of sixty senior level managers at one company addressed factors related to employee

retention levels, including national culture, organizational culture, workplace culture, job satisfaction, retention, and organizational performance. A major driver among employees' retentions is job satisfaction. Key factors relating to job satisfaction noted by Shore included: (a) achievement, (b) recognition, (c) the work about the job itself, (d) responsibility, and (e) advancement or growth within the organization.

Ratna and Chawla (2012) conducted an exploratory study, using a random sampling method, to sample 107 executive level employees from three IT organizations. Comparable to Shore (2013), the research objective in Ratna and Chawla's study was to identify key factors of retention, employee satisfaction, and the effectiveness of the retention strategies. Ratna and Chawla collected primary data through questionnaires, and secondary data from online resources, magazine journals, and newspapers.

Some strategies used throughout the three organizations include (a) communication forums allowing employees to directly communicate with the employer, (b) surveys calculating employee satisfaction, (c) incentives regarding performance, (d) awards given on the spot, (e) appreciation letters, (f) recognition of birthdays and anniversaries, (g) bonuses, and (h) stock options (Ratna & Chawla, 2012). The strategies outlined by Ratna and Chawla are relatable to Shore's (2013) key factors of job satisfaction: (a) achievement, (b) recognition, (c) the work about the job itself, (d) responsibility, and (e) advancement or growth within the organization. Findings from Ratna and Chala's study included communication gaps between the employer and the employee and employees not aware of policies, ultimately leading to increased attrition.

Skill shortage is a challenge within the information technology industry. Mohlala, Goldman, and Goosen (2012) conducted a study to gain a deeper understanding on how to retain employees. The qualitative case study, utilizing a purposeful sample of the semistructured interviews, enabled the exploration of the challenges among leadership teams to retain employees. The specific group of employees interviewed in the study did not have a retention strategy; Mohlala et al. recognized the lack of strategy development among the specific group created deficiencies among crucial skills for the organization.

Kim (2012) using a different research method than Mohlala et al. (2012), applied survey questionnaires among state government IT workers to understand the influence of human resource management (HRM) practices. Results highlighted by Kim include (a) opportunities for promotion, (b) training, (c) communication, (d) pay, and (e) family-friendly policies were significant variables attributed to turnover intentions. Both Mohlala et al. and Kim reported organizational leaders need to acknowledge and consider several strategies to minimize voluntary employee turnover.

Ratna and Chawla (2012) indicated retention should be the primary focus for companies rather than recruiting and training. Previous studies addressing recruitment, retention, and turnover found five reasons on why employees left their laboratory job prematurely; (a) new job within the industry, (b) moved or family obligations, (c) retirement, (d) left the laboratory industry completely, and (e) termination of the employee (Slagle, 2013). The success of a company relates to their employees and retaining employees is important (Frey, Bayon, & Totzek, 2013). Dresner et al. (2014) noted employee retention is linked to those motivated and incentivized.

Rewards and recognition. Empowerment among staff allows employees to take on additional roles and responsibilities in the workplace (Ertürk & Vurgun, 2015). Having an increased autonomy and greater circle of influence empowers lower-level employees and builds trust and credibility (Ertürk & Vurgun). Kim (2012) explored the relationship between supervisory communications and turnover intentions among IT employees. Kim (2012) identified variables affecting turnover intentions: (a) promotion opportunities, (b) training and development, (c) supervisory communications, (d) pay and reward satisfaction, and (e) family-friendly policies. Among females, family-friendly policies were the highest regression coefficient; whereas opportunities for advancement and promotion were the highest regression coefficient among male employees (Kim).

The goal of Ertürk and Vurgun's research was to provide evidence of empowerment and how it might lessen negative attitudes in the workplace, reducing turnover intentions. Results from Ertürk and Vurgun's study recognized career development, recognition, transparent communications, and training enhance employee perceptions of support in the workplace. Similar to Ertürk and Vurgun, Gieter and Hofmans (2015) found an employees' behavior and attitude is affected by their personal satisfaction of material and psychological rewards. Not all employees have the same outcomes between rewards and recognition (Gieter and Hofmans).

Training. For businesses to stay competitive, investing in human capital and workforce training is a central problem (Pervical, Cozzarin, & Formaneck, 2013). Pervical et al. (2013) conducted a regression analysis, using seven years of longitudinal data, looking at the influence of training investment on productivity among 14 industries

in Canada. Pervical et al. reported training had a positive effect on productivity in 12 out of 14 industries, but only four industries had a positive return on investment. Further conclusions from Pervical et al. (2013) noted whereas training had little influence on financial effects, it was necessary for companies to maintain current labor productivity.

Fonjugo et al. (2013) conducted a formative evaluation study to describe standardization and performance efforts for strengthening laboratory education. The purpose of the study was to strengthen the healthcare system regarding a skilled and trained laboratory workforce. The necessity of strengthening pre-service laboratory training is to maintain trained staff, in the result, ensures correct and reliable results used throughout the healthcare system for diagnosis, prevention, and treatment. A clinical laboratory remains one of the six essential components for healthcare systems, meeting the needs of the community (Fonjugo et al.).

Among study participants, 80% of the participants (179 / 224) wanted to remain in their current job because of regular opportunities for training and professional development (Dresner et al., 2014). An HR strategy of education and training allows for increased psychological empowerment among employees and how it enhances an employees' commitment to the organization (Ertürk, & Vurgun, 2015). Laboratory professionals working in the public sector remain in their current job at a higher rate compared to those working in the private sector (Marinucci et al., 2013). Marinucci et al. (2013) used the findings to develop strategies for long-term sustainability within the laboratory professional's arena and specific items directly relating to human resource management.

Acquiring a skilled workforce for the organization creates challenges, yet retaining trained employees remains necessary to help minimize the damage of the company's performance (Samson, 2013). Organizations lose knowledge and training investments, ultimately affecting the bottom line (Ratna & Chawla, 2012). Gayathri, Sivaraman, and Kamalambal (2012) stated recruiting the right people with skills and credentials can be challenging, but training and sustaining employees can be equally challenging. Employee turnover negatively affects and impedes organization training. Investing in organization training is necessary for companies to maintain current levels of production and productivity due to employee turnover (Pervical, Cozzarin, & Formaneck, 2013).

Leadership for Retention. Another aspect of innovation affecting employee recruitment and retention is leadership within an organization. Leaders face sales figures or financial statements reflecting how well their companies have performed to date (Olivier, 2012). Scholars and practitioners stated the goal of any organization is to select a strong leader (Nestbit, 2012). Making a decision about who will lead is difficult, because of the economic turmoil; the leader's selection has a significant influence on the financial performance of organizations. Self-development skills require the development of other skills to establish and maintain trust between the leader and all employees (Nesbit). Managers play a vital role in creating a better work environment and addressing employee concerns (Gayathri et al., 2012).

Leadership performance is necessary for successful organizational change, innovation, and creating new concepts of what works (Basford, Offermann, & Wirtz,

2012). Cortelyou-Ward et al. (2011) recognized clinical laboratories have struggled to recruit and retain diverse staffing among the laboratory. Furthermore, Cortelyou-Ward et al. (2011) recommended laboratory managers need to address staffing models to promote skill knowledge, thus improving employee satisfaction and self-validation by encouraging training opportunities and mentoring to help personnel succeed. Implementing human capital strategies help increase performance and accountability but are a challenge to managers. Kim (2012) stated managers need to acknowledge human resource management factors to address employee turnover and turnover intentions and should consider several strategies to show support for career development goals.

The demand for quality operations and service delivery cannot be separated when looking at the relationship of service development and job training (Pasaribu, 2015). Effectiveness and efficiency are key attributes when measuring employee performance. Quality and quantity of work produced are how employers can measure productivity Pasaribu. Pasaribu (2015) analyzed the relationship of situational leadership behavior with organizational culture and human resource management strategies affected productivity. Pasaribu collected data through documents, questionnaires, and interviews; using a Likert Summated Rating. Pasaribu concluded organizations who have an effective HR management strategy to recruit and retain employees might improve productivity. Further research Pasaribu suggested included the implementation of those HR strategies to see how they directly correlate to productivity, quality, and profitability.

Milman and Dickson (2014) used a snowball sampling technique to explore predictors of retention among hourly line-level employees' in US theme parks. Of the 27

characteristics studies, relating to employment, the top traits included (a) opportunities for advancement, (b) being treated appropriately in the workplace, and (c) having a fun and challenging job. The level of satisfaction, pay, and developmental training are predictors of hourly employee retention (Milman & Dickson). Additional factors noted by Milman and Dickson include consideration of work hour flexibility and performance reviews for hourly employees. Implications from Milman and Dickson's study encourage managers to create workforce strategies to retain and attract new employees.

Retention Management. Recruiting individuals with needed skill sets and credentials can be challenging, along with training and sustaining individuals as long-term employees (Gayathri, Sivaraman, & Kamalambal, 2012). Workforce and strategic planning can be difficult for organizational leaders dealing with employee turnover (James & Mathew, 2012). Capitalizing on employee contributions is a way for organizations to be successful (Acar & Acar, 2012). Self and Self (2014) recognized organizations are at risk for retaining counterproductive employees. Self and Self (2014) suggested managers work with staff to improve their performance or move forward with termination, as counterproductive employees can drain financial resources or negatively influence others in the organization.

Companies benefit from low turnover because their human capital creates a competitive advantage of firm-specific skills, knowledge, and abilities (Shaw, Park, & Kim, 2013). Employees hold tacit knowledge, and institutional knowledge can be difficult to replicate (Shaw, Park, & Kim, 2013). Organizations need to deem retention policies as a crucial task, helping minimize employee and skill shortages within

industries (Ortlieb & Sieben, 2012). Strategic management of human capital helps organizations to understand employee mobility and possible quit intentions, helping create a competitive advantage among knowledge-intensive industries (Campbell, Ganco, Franco, & Agarwal, 2012).

Organizations are at an increased risk of losing employees, human capital, to other organizations (Shore, 2013). Personal dissatisfaction is a major reason for voluntary employee turnover within an organization (James & Mathew, 2012). Retention management will help HR secure employees and develop strategies and policies, helping retain high-performing employees (Yamamoto, 2011). Hom, Mitchell, Lee, and Griffith (2012) researched understanding and prediction of why an employee chooses to leave or stay with an organization. Hom et al. (2012) discussed four dimensions an employee's mindset typical falls within enthusiastic leavers and stayers and reluctant leavers and stayers. The profile of an employee might help managers understand the potential of voluntary turnover and why they remain in the organization (Hom et al.).

Healthcare Vacancies

The changing landscape of the laboratory industry calls for efficient and effective workplace planning. Over the past 20 years, Bennet et al. (2014) found the number of clinical laboratories training programs decreased from 720 to 552, by almost 25%. Furthermore, the decrease in training programs can affect rural areas with prospective laboratory personnel. Portability of licensure can minimize geographical shortages and enhance the delivery of healthcare (Kels, 2013).

Garcia et al. (2011a) estimated shortages within clinical laboratories from surveys consisting of 13 questions, noting they could not find any certification standards regarding laboratories' organizational and staffing requirements. Garcia et al. (2011a) found smaller hospitals, with less than 100 beds, or outpatient facilities reported higher vacancy rates than larger facilities with 300-499 beds. Numerous challenges exist in hiring laboratory workforce and night shift openings remain the hardest to fill (Garcia et al., 2011a).

Garcia et al. (2011a) noted also aging affects the clinical laboratory field as older employees reach retirement. A key finding was the preference for credentialed or certified Medical Laboratory Technician or Medical Technologists (MLT / MT) as employees and or hiring supervisors. Garcia et al. (2011a) referenced the growing field of laboratory medicine and advancing technology, which requires more effective skills within the workforce. Similar to Garcia et al. (2011a), Robboy et al. (2013) stated the shortage of pathologists affects patient access and quality of healthcare providers' ability to manage population health. Staffing shortages in the clinical workforce can relate to increased turn-around-times and decrease of accurate reporting (Isouard, 2012). Furthermore, recruiting and retaining staff remain difficult to manage within laboratory medicine (Garcia et al., 2011a).

The American Society for Clinical Pathology (ASCP) administers surveys every 2 years to addresses changes in academic, governmental, and industry sources for laboratory labor (Garcia et al., 2011b). Garcia et al. (2011b) concluded the certified medical laboratory staff has higher earnings compared to those without certification,

regardless of position type or level (Garcia et al., 2011b). Kacmarek et al. (2012) echoed the concerns addressed by Garcia et al. (2011a) regarding key shortages within the medical industry.

The strengths of Robboy et al. (2013) study included the level of detail and scope large enough to look at numerous variables associated with the pathology workforce. The narrowed scope of Karmarek et al. (2012) emphasized the difficulty of staffing faculty positions for respiratory therapy, addressing retirement, and decreased clinical rotation resources. Regarding vacancies in the allied healthcare industry, Kacmarek et al., (2012) projected future job growth to create an increased need for respiratory therapists by 9.9% over the next 10 years.

Isouard (2012) recommended improved productivity and efficiency through re-design using new technologies to address workforce shortages. Isouard also suggested improved quality using appropriate clinical guidelines serves to reduce some service requirements. Slagle (2013) provided recruitment strategies including public awareness, competitive wages, and diversity when recruiting. Recommendations regarding retention include (a) improvements in employees understanding the relevance of job, (b) clear job descriptions, (c) adequate orientation, (d) controlling stress in working conditions, and (d) aiding organizational retention as a focal point (Slagle, 2103).

The healthcare system depends on a workforce, which can maintain skills and competencies. Sub-Saharan Africa has severe shortages in the healthcare workforce, resulting in an imbalance of labor, jeopardizing the ability to meet the Millennium Development Goals (Fonjugo et al., 2013). Fonjugo et al. noted a lack of retention

strategy has created workforce shortages within the laboratory. Community leaders, education systems, and organizations need to place emphasis on pre-service education to maintain and sustain knowledgeable and skilled healthcare workers. Business leaders need a situational analysis of their organization's workforce carefully to plan and take appropriate steps (Fonjugo et al., 2013).

Collins (2012) noted difficulties within the healthcare industry and motives would cause individuals not to enter the primary care workforce. Collins revealed why healthcare careers are less desirable: (a) salary, (b) stressful work conditions, and (c) the lack of desire to work in rural areas. Echoing Collins, Isouard (2012) reported staffing concerns specific to the laboratory industry in rural areas. Increased unemployment for healthcare professionals is a concern in Serbia, and Santric-Milicevic et al. (2013) identified variables affecting the employment rates for the healthcare sector from 1961 to 2008. Strategic planning among policymakers is necessary to improve performance within the healthcare system along with identifying possible shortages. Santric-Milicevic et al. identified the gross domestic product and population size were significant predictors among staffing needs for physician and nurses in Serbia. Santric-Milicevic et al. concluded creating human resources for health (HRH) policies and modeling approach is necessary to help balance the supply with the need for healthcare professionals.

Professional Development. Incorporating the needs of economic demands and hiring opportunities is a driving force for Australian universities, affecting how the university measure outcomes (Jones et al., 2012). Jones et al. (2012) noted the importance for universities of balancing academia and creating transferable skills in the

private sector. Jones et al. emphasized the necessity of skills and how a peer-to-peer approach in career development enhances career opportunities with academic and professional skills. Peer learning and culture cultivates collaboration, leading to a transfer of knowledge. Some skills Jones et al. noted included the ability to work together in teams, network with others, communicate, and express the ability to make critical decisions. These are all skills used to expand career potential (Jones et al., 2012).

Despite obstacles in establishing an efficient peer-to-peer support center, Jones et al. (2012) illustrated the Support, Opportunities, Advice, Resources (SOAR) Centre service model as an invaluable support service offering support, opportunities, advice, and resources to students to help develop skills and career development. The growing role of professional development has emerged with employer's demands. Adopting an integrated approach, such as the SOAR Centre proves vital for all stakeholders to improve opportunities for graduates while contributing to societal needs (Jones et al., 2012).

Medical Laboratory Errors

Medical errors occur and are a result of many inputs and factors, but patient safety is necessary for all stakeholders including education, credentialing, and accrediting agencies (Serteser et al., 2012). Medical errors result as one of the leading causes of deaths in the U.S. The cost of preventable medical errors, not including the cost of human life, has a total yearly cost of $17-$29 billion (Serteser et al.). Reducing medical errors and improving patient safety has become an international concern (Serteser et al.).

The Institute of Medicine (IOM) identified a result of the lack of standardization and governance among medical agencies, was the healthcare industry being a decade behind other high-risk industries based on safety issues (Serteser et al., 2012). Serteser et al. (2012) recognized learning from mistakes could create best practices within the community and would ultimately help alleviate errors. Plebani's et al. (2013) reported that continuous quality improvement, Six Sigma, lean, quality indicators, and risk management are important tools to help regulate and manage quality in medical laboratories. Plebani et al. noted the need for recognizing the quality indicators (QIs) in the total testing process (TTP) to concentrate on meeting three objectives: (a) patient-centered, (b) consistency of accreditation medical laboratory standards, and (c) meet all factors of the TTP.

Successful quality laboratory services require a strong workforce, technical skills, and dedication to training laboratory professionals (human resources). The development of human capacity remains essential within healthcare systems to bridge the gap between the shortages of trained personnel. The high-turnover rate seen among the laboratory workforce causes additional strains with financial and resource investments needed to advertise, interview, create work placement, and train new staff (Marinucci et al., 2013).

The term coined by Plebani et al. (2013) *harmonization* refers to the all-encompassing ability to optimize laboratory services with reducing the risk of errors. Medical laboratory errors can cause rippling effects on the delivery of healthcare of individuals. Plebani et al. (2013) referenced performance and outcome measures as important quality indicators for the care of patients within laboratory medicine. Serteser

et al. noted quality management as ensuring the organization has a consistency among quality planning, quality control, quality assurance, and quality improvement.

Patient Protection and Affordable Care Act

The Patient Protection and Affordable Care Act (PPACA) signed into law by President Obama in March 2010, ensures access to affordable healthcare for over 30 million citizens of the U.S. (Ghosh, 2013). The deployment of the PPACA generates usage of healthcare services, potentially increasing the total cost of healthcare spending. The Congressional Budget Office projects a U.S. federal budget deficit of $210 billion by 2021 from the implementation of the PPACA (Jost, 2012).

Initiation of the PPACA occurred to provide comprehensive healthcare of expanded public programs and modify healthcare insurance in the private sector. Lower-income individuals and families experience financial strains with high deductible medical policies additionally. Evidence shows people forgo routine and medically necessary care because of the additional financial burden (Jost, 2012).

Influence of PPACA. The implementation of the PPACA expands access to healthcare insurance to millions of Americans, but Breen (2012) emphasized the increased demands this expansion will have on the healthcare system overall. The obstacles about supply and demand of the healthcare industry mount. Hospitals work to improve operational efficiencies and market conditions to help manage population health (Dafny, 2014). With the increased demand on the healthcare system, the workforce faces extreme challenges. Not only does the healthcare workforce face challenges, but Breen

(2012) projects by 2015, the physician shortage will be 29,800, and by 2025, he estimates the shortage to be approximately 65,000 physicians.

Risk mitigation is an important aspect to address increased productivity, employee engagement, and lower employee turnover (Paton, 2012). One way of attempting to deal with a complex society is through strong central planning and direction. These objectives can help with interventions needed within the healthcare workforce and treatment of patients (Paton, 2012). Private healthcare organizations in Great Britain focused services to reduce cost and solutions to health concerns within the workforce (Paton, 2012).

Transition

The first section is a summation of the proposed study. A scholarly research review of peer-reviewed articles in the review of literature validates the need for improved recruitment, education, and retention of employees to improve medical laboratory service quality. Acquiring a skilled workforce is not only necessary for the organization; retaining trained employees remains necessary to help minimize the damage of the company's performance (Sampson, 2013). The loss of organizational knowledge and training investments affect financials, and retention strategies help a company's financial challenge (Ratna & Chawla, 2012).

From the review of the literature, skill retention plays an important role for the laboratory industry to maintain quality operations. Improved business practices of the industry can bring value through the integration of improved recruitment and retention of experienced labor. However, the increased demand for staffing might outweigh the

current efforts to meet the workforce needs. Quality laboratory services remain successful with a strong workforce, technical skills, and dedication to training laboratory professionals (human resources) (Marinucci et al., 2013). The development of retention strategies helps to increase patient care quality and decrease medical errors (Serteser et al., 2012).

The proposed qualitative study might influence social changes needed in the laboratory industry to provide solutions for improved employment retention, which ultimately improves the quality of medical care by retaining experienced employees. I plan to use the conceptual framework for the study, TWA, as a lens to look at the degree of satisfaction between preanalytic employees and their work environment to see how these relationships might serve as a retention indicator for organizations. The goals of Section 2 are to describe the participation, data collection, and data analysis for the proposed study. The presentation of findings, implications for social change, recommendations for action and further research, along with reflections are in Section 3.

Section 2: The Project

My review of professional and educational literature substantiated the general business problem of high voluntary employee turnover in clinical laboratories, which creates a loss in organizational profitability and productivity. Optimizing effective employment retention strategies within the healthcare sector might improve employee satisfaction, thus reducing turnover. The outcomes of this study may offer workforce strategies laboratory managers can implement to reduce employee turnover of preanalytic employees in clinical laboratories. In this section I discuss my role as a researcher, identify the study participant selection process, and offer a rationale for choosing the selected research and design methods. I also discuss the techniques I used for population and sampling, along with data collection instruments, techniques, and analysis.

Purpose Statement

The purpose of this qualitative, exploratory single-site case study was to identify workforce strategies clinical laboratory managers can use to retain trained preanalytic employees. The population for the study included managers who work in a community-based clinical laboratory located in the mid-southern United States. I used semistructured interviews and document reviews as the primary sources of data for the study. The implications for positive social change include the potential to influence business practices by contributing new knowledge for business managers to develop strategies to retain and improve employment opportunities for preanalytic employees.

Role of the Researcher

The role of the researcher in qualitative research includes responsibility for the design, collection, and interpretation of the data (Denzin & Lincoln, 2011). I served as the primary data collection instrument. To mitigate bias, I collected data in a trustworthy manner and documented any personal biases on the study topic before the interview process and document review (Covell, Sidani, & Ritchie, 2012; Unluer, 2012). This identification of personal biases throughout the review of documents and interactions with study participants during the data analysis process was an essential bias-mitigation element (Yin, 2014). A potential bias I noted was my previous role within the laboratory industry as a Chief Operations Officer (COO) for a medium sized medical laboratory located in the mid-south. My responsibilities spanned the entire organization, but specific to the study, my role included all operations within human resources (HR) and the medical laboratories. During the investigation, I worked to mitigate preconceived knowledge, beliefs, or judgments' about the work environment, and sought to protect the feelings of trust with the study participants (Hofmeyer, Scott, & Lagendyk, 2012; Unluer, 2012).

I had only limited concerns regarding the integrity of data collection and analysis because I used interview questions in a non-biased and neutral manner while actively listening and taking notes during the interview process. I recorded interviews with an Olympus digital voice recorder, model vin-4100, and had them transcribed by a local transcription service for further interpretation and description. The individual transcribing the interviews signed a confidentiality agreement (see Appendix B).

I coded and analyzed the data to determine centralized themes based on participant responses to each interview question in which they offered insights and explained their perceptions of strategies to reduce employee turnover of preanalytic employees in clinical laboratories. I relied on the protocols outlined in the *Belmont Report's Ethical Principles and Guidelines for the Protection of Human Subjects of Research* to maintain ethical standards in the study. These protocols addressed the issues of respect for persons, beneficence, and justice. I used an interview guide to enhance each interview session with research participants (Marshall & Rossman, 2011; Yin, 2014), which had the added benefit of mitigating bias and maintaining ethical standards (see Appendix C for the case study protocol and procedure guide for the study).

Participants

The eligibility criteria for this study required that the participant be (a) over the age of 18, (b) employed by a community-based medical laboratory for at least one year, (c) in a management position, and (e) successful at addressing retention problems of the preanalytic employees they are responsible for. The study population consisted of an available pool of 15 clinical laboratory managers who oversee preanalytic assessioning. I established an intended study sample size of 10, plus three participants for saturation purposes. The plan included purposeful sampling to ensure enough individuals existed with specific knowledge about the topic of preanalytic processing from the staff available for interviews.

Access to participants came from recommendations of the HR director of the company (Robinson, 2014). The HR department provided me contact information of

potential participants. Study participant recruitment included targeted email communication, including a letter of participation for specified individuals meeting the criteria. My goals for this email were to describe the study intent and primary objectives, and to make it clear participation was voluntary (see Appendix D & see Appendix E).

A working relationship with study participants helped create mutual trust. An essential task to successful qualitative research includes a working relationship with participants (Doody, Slevin, Taggart, 2013). Effective communication, clear outlining of study objectives, and a comfortable environment helped participants share information from their individual perspectives (Marshall & Rossman, 2011). Rubin and Rubin (2012) suggested the use of active listening, semistructured questions, and follow-up questions during the interview process to promote complete and honest answers from study participants. I used active listening throughout the interview process. Initial and follow-up questions included in the design allowed the participants to be candid and open to help establish rapport (Marshall & Rossman, 2011).

Research Method and Design

Potential research methods investigators used are qualitative, quantitative, and mixed methods (Yin, 2014). Through evaluation, I determined that the appropriate research method to explore the specific business problem was a qualitative research method with an exploratory case study design. A qualitative method with an exploratory case study design permitted me an in-depth opportunity to interview participants in order to understand the premature departure of employees and to address workforce strategies to retain trained preanalytic employees.

Research Method

My primary goal in this study was to address the central research question: What workforce strategies do clinical laboratory managers use to retain trained preanalytic employees? Qualitative research served as the appropriate method for this study because of my need to develop a detailed understanding of the participants feelings, values, opinions, perceptions, and rationales which served as sources of rich data for my exploration (Cronin, 2014; Yin, 2012). The detail I gathered using a qualitative method was necessary to develop a strategy to reduce employee turnover. The central research question guided the framework for the study and my use of qualitative research design (Denzin & Lincoln, 2011). The focus of quantitative research is to examine causal relationships or test a theory of quantified phenomena based on numbers to determine relationships between study variables (Denzin & Lincoln, 2011; Rubin & Rubin, 2012). Because underlying variables and complex underlying relationships played an important role within my study, a quantitative method was not suitable for my objectives (Knight & Cross, 2012). Specifically, I worked to include underlying variables to investigate the reasoning behind employee turnover within preanalytic laboratory trained staff.

Researchers use a mixed methods methodology to integrate qualitative and quantitative techniques into a single study by using inductive and deductive methods (Covell, Sidani, & Ritchie, 2012). However, the distilled information of quantification or analysis of factors gathered by a quantitative study did not support my objective of understanding and describing responses to employee turnover (Arghode, 2012; Hoare &

Hoe, 2013). Therefore, I determined that, as with quantitative methods, or mixed methodologies were not viable options for possible study designs.

Research Design

Exploratory, single-site case study design permitted me to gather rich data that I could use to identify and describe potential strategies laboratory business leaders can implement to improve retention of preanalytic employees. Cronin (2014) emphasized the value of a case study when she explored how students learn in healthcare settings by interviewing and exploring real-life contexts to investigate and understand modern phenomena. Case studies use diverse sources of information and help expand the description of the phenomenon (Yin, 2014). My intent in the study was to explore issues, and a case study approach provided an opportunity for that exploration (Moll, 2012). In a case study, the questions and conclusions have a logical connection (Yin, 2014). A case study inquiry can address research questions requiring an exhaustive understanding of organizational or social processes (Moll, 2012).

Researchers use phenomenological design if they need to exclusively focus on lived experiences (Englander, 2012), omitting other sources and limiting the scale of the topic. Ethnographic study design helps researchers observe beliefs and behaviors of a culture (Marshall & Rossman, 2011), which did not suit the needs for my study of workforce strategies to improve employee retention. Other qualitative research designs were likewise not suited to my needs.

Population and Sampling

I gathered data from public information and interviews of managers who work with preanalytic employees. Public information included (a) press releases, (b) job postings, (c) job descriptions, and (d) newspaper articles. The study population eligible to participate in this research consisted of 15 managers who work with employees in the accessioning department for a medical laboratory (Francis et al., 2010; Rubin & Rubin, 2012).

Preanalytic employees, who work in the specimen management department (SMD), are the individuals responsible for the initial data entry and patient demographic input for each specimen. The SMD consists of employees who are non-technical, hourly employees who do not have specific educational requirements to complete the job. The job description of these preanalytic employees includes: (a) reviewing medical orders from a requesting medical provider for laboratory tests, (b) inputting patient demographics, (c) providing other information and test selection, and (d) entering other pertinent data into the laboratory information system. The preanalytic employees also must be familiar with specimen requirements for tests, as well as specimen processing and stability of such medical samples. Additionally, the preanalytic employees require familiarity with the Health Insurance Portability and Accountability Act (HIPAA), Occupational Safety and Health Administration (OSHA) personal protective equipment (PPE) guidelines, and other regulatory requirements.

The segment of the study population was management at the clinical laboratory. Managers who directly interact or oversee the SMD were potential study participants. I

worked from the premise that a collection of data from public documents and participants with specific knowledge of effective HR strategy relating to workforce strategies regarding retention might improve the employment and business model for preanalytic processes.

Purposeful sampling strategies are non-random, allowing researchers to use certain categories of individuals (Robinson, 2014). The study included a purposeful snowball sample of 10 people who meet the elegibility criteria. I used member checking to ensure data saturation was achieved (Francis et al., 2010). Data saturation occurs when no new information is forthcoming from the participants.

The basis for selecting participants for the study was their knowledge and expertise within a particular department analyzed. The suitability of a purposeful snowball sample in data collection, noted by Bernard (2013), came from individuals who have the knowledge and experience in the specific study topic. While non-probabilistic sampling technique is an effective technique for researchers who need to understand perspectives of participants (Walker, 2012), the researcher identified suitable recruits as members and ensure achievement of data saturation through purposeful snowball sampling (Bernard, 2013). Purposeful sampling allowed for an intentional sample of a particular group of people who have the best information about the problem being investigated (Walker, 2012).

Case studies facilitate exploration of contemporary phenomena (Yin, 2014). The department identified for the study population has the appropriate personnel to explore the influence of employee turnover among preanalytic employees in the clinical

laboratory relating to business operations. According to Francis et al. (2010), qualitative researchers should determine the sample size from the purpose and intent of the study, to include diversity of opinions and perspectives of study participants, to support data saturation. When themes within collected data repeats and does not enhance additional research findings about the topic of the investigated study, saturation achievement occurs (Fusch & Ness, 2015). Francis et al. emphasized the researcher should find the sample size matched to the design and judgment of study participant's viewpoints, suggesting the ten plus three rule for qualitative research. Additional interviews might not offer the discovery of new themes (Francis et al., 2010).

All interviews were face-to-face in the organization's conference room, eliminating the requirement for the participant to travel. The use of the conference room included the intention for the participant to be comfortable and provided a nonthreatening environment. One-hour interviews were completed.

Ethical Research

The Institutional Review Board (IRB) at Walden University reviewed the research design to ensure proper structure and conduct of data collection. I was responsible for compliance with the IRB. Compliance with the IRB guidelines protected the individuals who engage within the topic and ensure de-identification. The IRB approval number for my study is 03-31-16-0323432.

Participants were consenting adults over the age of 18. Targeted prospective study participants for the study were not a protected class according to the IRB specifications. Data collection did not start until after IRB approval through Walden University. There

were minimal risks identified for the study. Participants did not experience psychological, relationship, legal, economic, professional, or physical risks. Study participants did not encounter any risks to their safety or wellbeing. Data collected during the interview process and document reviews is confidential and safeguarded. Potential benefits of the proposed study outweighed the potential risks, where the IRB made sure the investigator was in full compliance of U.S. federal regulations. I completed the National Institutes of Health (NIH) web-based training programs about the protection of human research participants (see Appendix H).

Aluwihare-Samaranayake (2012) suggested that all study participants had a full understanding of the research process and their rights, achieved through the informed consent form (see Appendix D). The company signed a letter of cooperation and support allowing the use of the conference room (see Appendix F). At any time, participants may voluntarily withdraw from the study (see Appendix G). Study participants were not required to sign Appendix G and can still withdraw in person, over the phone, or by email.

Before the interview process, study participants received, reviewed, and signed an informed consent form (see Appendix D). Completion of the process occurred in face-to-face discussions with the study participant before the start of the interview. The informed consent document detailed an outline of the purposes and intent of the study. During the review of objectives, I discussed the ethical guidelines about the research and outline of the research design, the studied phenomenon, and IRB protocol. Participants received no incentives for participating in the study. Interviews took place in a natural setting, the

organizations conference room. Anticipated risks to study participants regarding their safety or wellbeing were minimal.

At any time during the interview, if the participant appeared to be uncomfortable, I was able to ask if the participant desired to stop the interview process. If uncomfortable, participants could have refused to answer specific interview questions. Should the study participant have decided to end the interview before completion, the participant received their audio recording file. Furthermore, destruction of written notes from the examiner would have occured immediately by shredding the documents.

To ensure the privacy of all study participants, the use of letter coding protected the privacy of study participants and helped ensure de-identification. To protect the personal information of participants, such as a name, I assigned a letter code to each participant and it was only known to myself. The code book remains secured in a private residence. The letter code assignment also served as an organization tool for data collection, analysis, and reporting.

Collected data will be kept and maintained in a safe, secure location for 5 years to protect the confidentiality of participants. Ensuring confidentiality of study participants is a fundamental guide in ethical research. Access to these documents is through a password-protected computer and will contain electronic copies of collected data. I am using a locked file cabinet to store hard copies of all data and analytical materials. After 5 years, destruction of the electronic data occurs by deleting files and physical documents shredded.

Data Collection Instruments

Walden University IRB approval is a requirement before beginning data collection. Data collection serves as a tool to structure the information collected by study participants. An interview guide outlines the interview questions and data collection activities, summarized by Yin (2014), to serve as the standard case study protocol. A qualitative case study is the proposed research approach. Primary and secondary sources are ways to collect data (Wahyuni, 2012). The diversity of sources within the qualitative case study allows for the exploration of values, opinions, and perceptions (Wahyuni, 2012; Yin, 2012).

Instruments

Instruments used to collect data for the study included (a) researcher, (b) informed consent form (see Appendix D), (c) audio recorder, and (d) interview protocol (see Appendix C). I served as the primary data collection instrument, as primary data sources were interviews with managers (Peredaryenko & Krauss, 2013). Secondary data sources included public information obtained from (a) press releases, (b) job postings, (c) job descriptions, and (d) newspaper articles. Various sources of information were used in case studies to substantiate and give depth within a topic (Yin).

The use of triangulation between the sources added credibility (Fusch & Ness, 2015; Marshall & Rossman, 2011). Yin (2014) noted case studies use triangulation provide support for evaluation of identified phenomena and ensure quality. Triangulation is a method used to establish the validity within research (Denzin & Lincoln, 2011) and the method to ensure data saturation is data triangulation (Fusch & Ness). The researcher

used triangulation by using multiple sources of evidence for the proposed study: (a) document reviews, (b) interviews, and (c) participant transcript reviews. Triangulation allowed the investigator to examine the research question from many perspectives (Fusch & Ness). Boblin et al. (2013) used multiple data sources, triangulation, to ensure richness of data collection and to confirm their findings. Triangulation occurs from identified themes. The goals of triangulation were to check the accuracy of the themes identified from the information within the document reviews and participant transcription review (Fusch & Ness).

Traditional case study procedures for collecting data occur through face-to-face, in-depth semistructuredinterviews (Yin, 2014). I used follow-up questions for probing responses for clarity. An interview protocol helped outline and structure the open-ended interview questions, and gave uniformity for each interview (see Appendix C). The interview guide helped format the interview within time and data collection parameters, and included research questions and design of the study (Yin). Furthermore, the interview guide ensured dependability of the case study by outlining the procedures and rules of data collection and analysis (Marshall & Rossman, 2011).

The use of case study databases enhances dependability within a study by generating and utilizing case study databases (Yin, 2014). I organized and maintained a case study database. Items for the database included (a) copies of documents, recorded audio files, and transcripts of interviews; (b) written notes taken during the interview and review of documents; (c) tables of codes from collected data analysis; and (d) summation of study findings.

In-depth descriptions from the research analysis enhanced the study findings and transferability (Marshall & Rossman, 2011). The establishment of study credibility is through researcher bias identification and member checking (Marshall & Rossman). The use of member checking allowed study participants an opportunity to discuss or clarify the interpretation, allowing participants to add additional perspectives to the study (Harper & Cole, 2012). Snyder (2012) sent study participants a copy of their interview narrative for a transcript review. I used an audio recording device to record each interview. After the transcription of the interviews, participants who wanted to review their transcripts can receive a copy of their interview transcript, to check for narrative accuracy. Participants were not required to review transcripts. The process of member checking allowed participants to confirm answers and correct errors or challenge perceived misrepresentations (Marshall & Rossman).

Also, the transcription of the interviews assisted for coding and analysis. A rich description from the interviews helped identify codes during the study (Rubin & Rubin, 2012). A collection of data (e.g., documents and interview transcripts) for the case study might be too large to include as appendices to the study. De-identified raw data availability is by request only. Participants could be provided with a summary of the interview results upon request.

Data Collection Technique

Yin (2014) noted case studies could use documents and information from a variety of sources such as (a) administrative documents, (b) written reports, (c) email communication, (d) memorandums, and (e) letters. Secondary data source documents

only include public information: (a) press releases, (b) job postings, (c) job descriptions, and (d) newspaper articles. Participants can provide additional public documents and no penalty occurred for declining. I reviewed job postings, job descriptions, and the organizations website and developed data files for these secondary data sources.

The rationale and benefit of using semistructured interviews allowed for the primary research question to be addressed along with additional insights and views from the participants to surface during the interview (Rubin & Rubin, 2012). The uniformity and structure provided by an interview guide assisted in data collection (Yin, 2014). Following the steps identified in the interview guide, I used semistructured, open-ended questions that support the central research question of the proposed study to capture the personal experiences of senior managers. The development of the interview questions focused around the research problem (Wahyuni, 2012).

Before the interview, study participants received the consent to participate in the research study document and signed the statement of participant to ensure approval of recording the interview (see Appendix D). An hour block of time was scheduled for the semistructured interviews of the participants at the agreed upon time and date. Face-to-face interviews enhanced the detail of response to interview questions. Telephone interviews reduce the ability to build rapport with study participants, resulting in less elaboration of response (Irvine, Drew, & Sainsbury, 2013). The interviews took place in a private conference room and recorded using an audio recording device. During the interviews, I took notes pertaining to the participant's comments, facial expressions, and tone of voice. The interviews occurred face-to-face over the period of a week.

An Olympus digital voice recorder was used by the researcher to record the interviews, where a local transcription service transcribed each interview for accuracy. The recordings served as the primary data collection process and transcribed for data analysis. Member checking allowed individuals participating in the study to verify the accuracy of the information they gave during the interview process (Doody et al., 2013; Harper & Cole). Houghton, Casey, Shaw, and Murphy (2013) used member checking in their qualitative study during the interviews before data analysis. Should study participants have wanted to make changes, the researcher made notes regarding how the participant changed the response from the original transcript.

Data Organization Technique

Data organization is fundamental to understand and organize data (Garcia-Mila, Marti, Gilabert, & Castells, 2014). I transfered and deleted audio recordings from the interviews and stored computer audio files from the Olympus recording device on a password protected Digital Versatile Disc (DVD). Assigning generic codes to each participant achieved confidentiality (Gibson, Benson, & Brand, 2013). The data collection process included de-identification of study participants. The data recording protocol included the use of an assigned letter code (P1, P2, P3, etc.), used to organize and track data from personal interviews. The purpose of assigning letter codes was to de-identify study participants for collection and analysis of data (Miles & Huberman, 1994). An assignment of a letter code occured uniquely for each participant and was tracked in a code book. The letter code and letter code book served as an organizational tool for data collection, analysis, and reporting.

In addition to data collected from face-to-face interviews, methodological triangulation of other data sources from company documents augmented the interview data. Yin (2014) illustrated an important aspect of a case study is note-taking. Verification of documents and interviews immediately after data collection was an important practice, and recorded help track data (Miles & Huberman, 1994). Creating and maintaining a data log in an Excel spreadsheet on a password protected DVD helped organize data. Items included on the data log are: (a) type of data (transcription or document), (b) data identification (document name or interview letter), (c) document file name on the computer, (d) collection date, (e) collection location, and (f) file name of research notes.

Following participant verification of the transcribed interview, deletion of audio recordings from the audio recorder occurs and stored as electronic files on a password protected DVD to ensured participants' protection (Wahyuni, 2012). The transferred electronic files, housed on a DVD, have a password protected encryption. Hard copy documents and recorded data will remain in a locked file cabinet. The deletion of documents and electronic files will occur after a 5-year period. I will shred and appropriately dispose of all of the materials.

Data Analysis

Study participants received encouragement to share perspectives and experiences in the face-to-face, semistructured, open-ended interview forum. Data analysis was the foundation of creating meaningful order from the culmination of data sources (Yin, 2014) and was one of the most important steps in the research process (Doody et al., 2013). The

data analysis process recommended by Yin (2014) for qualitative case study research was coding.

Coding is an analytical method of recognizing key themes and surfacing patterns with a word or phrase found in the data (Wahyuni, 2012). The goal of a careful review of the interview transcriptions was to discuss themes to the study research question. Pinpointing themes and relationships during data analysis helped categorize and sequentially address the primary research question (Denzin & Lincoln, 2011). The purpose of the development of interview questions was to provide exploration in the qualitative case study addressing the overarching research question: What workforce strategies do clinical laboratory managers use to retain trained preanalytic employees?

Before importing textual transcripts into ATLAS.ti.7 for data analysis, those study participants who wanted to review their transcript will receive the Microsoft Word data document, via email, to verify the accuracy of data, known as the process of transcript review (Harper & Cole, 2012).Transcription of the interviews plays an important role during data analysis needed to pinpoint relevant themes. Recognizing unifying themes from interview data was an important task for an investigation (Rubin & Rubin, 2012). Associated to the specific research question, I organized and arranged the data into central themes through the use of thematic analysis from patterns across data sets important to the description of a phenomenon studied. Data analysis for the qualitative case study used both deductive and open coding (Wahyuni, 2012).

The use of deductive coding created the primary codes during the document review. The goals of the design of open coding (inductive) were to identify concepts and

patterns during analysis (Rubin & Rubin, 2012). Furthermore, the open coding process helped relate conceptual categories to the research question, allowing for identification of recurring ideas and patterns (Marshall & Rossman, 2011). Comments and observations from interview note sheets supported the identification of codes and themes. The importance of a code depended on the frequency the code emerges within a data set (Bernard, 2013).

Yin (2014) suggested using software tools to code the case study narrative for qualitative data analysis. McIlvennan et al. (2014) used ATLAS.ti.7 software to analyze data, using the mixed approach of inductive and deductive analysis. The computer assisted data analysis tool ATLAS.ti.7, helped code identified themes and analyzes coded themes from the transcribed interviews (Wahyuni, 2012), After reviewing the ATLAS.ti.7 software, online assistance and tools, manuals, and textbook, the ATLAS.ti.7 software was the appropriate choice for data analysis.

Data analysis occurred through the assistance of a computer assisted qualitative analysis tool, ATLAS.ti.7, looking for relationships among the codes and patterns. I used Moustakas' modified van Kaam method for analysis (Moustakas, 1994). This method includes seven steps:

1. Listing and preliminary grouping.
2. Reduction and elimination.
3. Clustering and thematizing the invariant constituents.
4. Final identification of the invariant constituents and themes by application.
5. Construct for each co-researcher an individual textual description.

6. Construct for each co-researcher an individual structural description.
7. Construct for each research participant a textural-structural description of the meanings and essences of the experience.

Transcription of the conducted interview audio recordings and narratives were data sources for the extensive computer analysis (Yin, 2014). Utilization of ATLAS.ti.7 software helped in theme recognition and interpretation. ATLAS,ti.7, helped the researcher to organize and code the data, categorizing the data into themes. The software allowed tracking and organization of a large amount of data from the interview transcripts and documents collected.

Proposed data collection and analysis aligned with the conceptual framework of TWA. The cross-sectional approach in the TWA was the basis for the design for the interview questions, addressing personal and environment values (Dawis, 1980). The interview questions in the study were used to address demands of the work environment, teamwork, growth opportunities, feeling valued, and role in the organization. The transcripts from the interviews allowed analysis of each question to identify themes corresponding to the TWA. After completion of the study, participants received a two page executive summary. The provided summary was a brief description of study findings, recommendations, and conclusions.

Reliability and Validity

Reliability

Rigor in qualitative research included the necessity for establishing consistency in study methods while helping provide accuracy in the study population so other

researchers could replicate the study with a different research sample (Denzin & Lincoln, 2011). Reliability helped minimize the risk of errors among research (Yin, 2014). Referencing external validity as transferability and internal validity as credibility served as an important concept for qualitative researchers (Marshall & Rossman, 2011). Yin (2014) noted reducing replication errors, and study bias achieves reliability.

The assessment of reliability within the topic area ensures the quality of social science research (Yin, 2014). Quality was an integral part of a qualitative research method and was the primary concern in all steps of this research process (Harper & Cole, 2012). Utilizing a case study protocol and database helped maintain reliability, which in return yielded successful study repeatability (Yin, 2014). Further, Yin (2014) and Bernard (2013) outlined by implementing and following investigation procedures, future researchers should be able to the initial case study by following the methodology outlined. Transferability is up to other researchers to decide if these procedures would work for their situation or for the research question investigated. Reliability within the current study was pivotal to ensure potential researchers can expand the field of recruitment and retention of future employees to meet civilian workplace requirements (Bernard, 2013).

Dependability

For the study design phase, dependability was an essential element of ensuring the integrity and reliability of collected data (Marshall & Rossman, 2011). Dependability is the assumption the study can be replicated or repeated (Bernardi, Merseguer, & Petriu, 2012). Although qualitative research evolves, Miles and Huberman (1994) noted

dependability refers to the consistency among the study processes and the need to stay consistent over time, methods, and researchers.

To achieve dependability Miles and Huberman further noted (a) clear research questions, (b) explanation of the roles of the researcher, (c) meaningful findings parallel to data sources, (d) the conceptual framework, and (e) the presence of the review panel enhances dependability. Reliable study findings occur when researchers conclude the same result utilizing the same approach (Yin, 2014). The use of a case study protocol helps focus and directly meet the needs of the investigation (Yin, 2014). The case study protocol included (a) overview of the study, (b) description of field methods for protocol and design, (c) data collection procedures, (d) outline of case study report, (e) interview questions, (f) data analysis techniques, and (g) reliability and validity methods (see Appendix C). The significance of a step-by-step explanation, case study protocol, was to help ensure study dependability by enabling future researchers to follow the similar framework and methodology used in the study (Wahyuni, 2012).

Credibility

Researchers conducting case studies have a responsibility to minimize misrepresentation and misunderstanding (Yin, 2014). Furthermore, qualitative researchers should ensure the validity through the integrity of their research by implementing measures to enhance credibility and transferability (Marshall & Rossman, 2011). Yin recommended the use of various sources of evidence within a topic to ensure validity. Identification of researcher bias, using member checking, and rich descriptions helped establish study credibility (Marshall & Rossman). Data triangulation used by case

study researchers substantiated the information collected from multiple sources, similar to looking through a crystal to see multiple viewpoints of data for extrapolation (Denzin, 2012). Also, data triangulation helped ensure study quality (Yin).

The use of a case study helped diminish the risks associated with the assumptions of internal documents and the interview process by triangulating the themes (Marshall & Rossman, 2011). To demonstrate validity, the researcher employed (a) data triangulation, (b) an examination of researcher bias, and (c) member checking to ensure the validity of the present study. To validate a study, Denzin and Lincoln (2011) noted the need of multiple data sources, where data triangulation can resolve opposing explanations. Data collection and analysis occurs from document review and information obtained from interviews served to be a validating process. According to Yin (2014), case study quality results from data triangulation from various sources, using a variety of methods to verify the same findings or results. Triangulation was one way to ensure the validity of study results (Fusch & Ness, 2015).

The opinions, personal values, or theories of the researcher can influence the validity of the study (Yin, 2014). Yin also noted to help protect the validity of data from bias, utilization of researcher bias identification will safeguard the credibility of the case study. Before data collection, the researcher conducted a personal assessment regarding biases about employment opportunities for preanalytic laboratory employees. Self-monitoring during the study period helped recognize potential bias of the examiner (Yin), where the goal was to identify personal beliefs regarding the identified problem of

recruitment and retention of preanalytic laboratory employees. During the interview process, participants received the same professional and respectful treatment.

Finally, member checking allowed for feedback from study participants (Torrance, 2012). Member checking is a technique providing feedback from study participants regarding the accuracy of materials the study researcher provides, post data collection (Marshall & Rossman, 2011). Responses from study participants can enhance the validity of the data and credibility of the qualitative case study (Marshall & Rossman, 2011). Inquiries allowed study participants to comment on the accuracy of the draft findings and conclusions (Harper & Cole, 2012). Feedback from participants served to enhance the accuracy and credibility of collected data and analysis. Should they request it, study participants will receive the summary of findings, recommendations, and conclusions (Harper & Cole, 2012).

Transferability

Describing the details of the context of the case study and providing rich descriptions help enhance the transferability for someone to replicate the study (Wahyuni, 2012). Although limitations exist regarding transferability, lessons of the case study can lead to recommendations to other cases or contexts (Marshall & Rossman, 2011). Miles and Huberman (1994) noted the study's transferability remains measured by the degree others can apply the conclusions, implications, and recommendations to other settings. Rich descriptions of the study population and the use of a field review panel will enhance transferability of the conclusion and study findings. I documented protocols, procedures,

and decisions carefully so other researchers can analyze and transfer the same methods to other settings (Marshall & Rossman).

Confirmability

The qualitative software (ATLAS.ti.7) assisted in the coding the data to identify, verify, and triangulate themes from interviews and the review of documents (Rubin & Rubin, 2012). Running queries in the data analysis software, ATLAS.ti.7, helped to demonstrate dependability and confirmability (Houghton et al., 2013). An interlocking analysis between document reviews and study participants provided spatial variability. Collectively, the study deploys various sources to triangulate findings and increases the quality and confirmability of the research results. Dependability, credibility, and transferability in qualitative research establish confirmability (Wahyuni, 2012).

Data Saturation

As mentioned earlier, data saturation occurs in qualitative studies when themes reoccur, and no new information becomes available to enhance research findings (Kemparaj & Chavan, 2013; O'Reilly & Parker, 2012; Walker, 2012). The method to ensure data saturation in the study is data triangulation (Fusch & Ness, 2015). The sample size included determination from the purpose and intent of the study, allowing for different perspectives of study participants, supporting data saturation (Francis et al., 2010). A purposeful snowball sample of 10 people is the initial sample size, where three additional interviews serve as the stopping criterion (Francis et al., 2010). Should saturation achievement have failed after interviewing 13 people, I would have used member checking to continue interviewing participants until achieving data saturation.

Transition and Summary

Section 2 included the intent of the study, the population sample, research method and design, protocol for sampling and participation, data collection, and analysis of the data. The purpose of this qualitative, exploratory single-site case study was to identify workforce strategies managers use to retain trained preanalytic employees in clinical laboratories. The use of a case study protocol and procedure guide will help standardize each interview to achieve dependability in the study (see Appendix C).

The various sources of information within the case study provide depth of the topic, providing support to identify phenomena and ensure quality (Yin, 2012). I used triangulation to create credibility between the sources (Marshall & Rossman, 2011), as well as the validity within the research (Fusch & Ness, 2015). The information yielded data allowing for complete analysis and review of the results. The goal of Section 3 is to present study findings from the evaluation and analysis of the case study. In addition to the overview of the study, Section 3 contains the applicability of the study findings regarding improved business practices, implications of social change, study recommendations, reflections, and study conclusions.

Section 3: Application to Professional Practice and Implications for Change

This section includes a presentation of my findings from the data collected from clinical laboratory managers who work in a community-based clinical laboratory in the mid-southern United States. I collected and analyzed the data using best practices identified in the literature. In addition to presenting my findings, in this section I discuss professional practice and implications for positive social change, and offer recommendations for action, recommendations for future research, and reflections on this process and study.

Introduction

The purpose of this qualitative, exploratory single-site case study was to identify workforce strategies clinical laboratory managers use to retain trained preanalytic employees. Interviews with 10 managers at one medical laboratory generated a wealth of data for data analysis. I triangulated data from transcripts of the interviews, field notes, and public documents. This analysis resulted in the identification of 82 codes and 279 meaningful quotations, supporting the significant themes and concepts of the study. Of the 82 identified codes, I used 67 codes in the emergent themes. Three major themes emerged from my analysis of the data including (a) employee's roles as stakeholders need to be enhanced, (b) employees need recognition and strive for rewards, and (c) there is a patient behind every specimen. These themes support the conceptual framework of Dawis, England, and Lofquist (1964) and the TWA. Additionally, the themes align with the research topic of retention strategies and with recently published research. I offer details of the study findings in the following section.

Presentation of the Findings

The following question guided this study: What workforce strategies do clinical laboratory managers use to retain trained preanalytic employees? Researchers can use multiple sources of data to create a linkage of evidence (Yin, 2014). The transcripts of each semistructured interview, participant observation, and field notes, along with the institution's public documents served as the different types of data I used for analysis and methodological triangulation (Fusch & Ness, 2015).

Emergent Theme One: Employee's Roles as Stakeholders Need to be Enhanced by Increased Training

The first main theme of the study involved managers using training to enhance employees roles as stakeholders to improve retention. The word training was repeated numerous times in my field notes from each of the interviews, and my review of the transcripts supported those notes. The number of times this code appeared in the transcript of each interview is shown in Table 2 below.

Table 2

Codes Relating to the Theme of Employee's Roles as Stakeholders Need to be Enhanced

Participant	Training	Quality	Standardized training program	Reduce Medical Errors	+ Employee Commitment
P1	6	3	5	3	4
P2	9	2	6	1	3
P3	13	4	6	4	5
P4	4	1	1	2	0
P5	8	2	3	4	0
P6	7	6	2	3	1
P7	4	2	3	2	0
P8	3	1	2	0	2
P9	11	3	3	4	2
P10	8	2	4	4	1
Totals	73	26	35	27	18

Participants expressed feelings that providing employees with a standardized training program would increase job satisfaction by investing in human capital, increasing employee commitment through psychological empowerment, and influencing production quality by enhancing patient care through accuracy in minimizing medical laboratory errors. Participant 2, for instance, emphasized the importance of training and continuing education, and noted that educating and investing in the employees may reduce errors while helping them accomplish their laboratory tasks.

Medical laboratory errors can cause a ripple effect in the delivery of healthcare (Plebani et al., 2013). This effect was noted by Participant 3 when he stated, "You have to build fail-proof systems and they need the proper training." These thoughts directly align with current literature which has indicated that a lack of training directly correlates

to turnover intentions (Dresner et al., 2014; Ertürk, & Vurgun, 2015; Lyons et al., 2014; Velez & Moradi, 2012).

On the issue of training, there was general agreement with Participant 3's sentiment that "the biggest issue would be the training of the specimen management department staff of what do we do with it, that there is not proper training in any way, shape, or form. You have to invest in your employees." Because of this and similar comments, it was clear from all ten interviews that the participants felt that training was the most important component for preanalytic employees in relation to enhancing quality, reducing medical errors, increasing employee commitment and job satisfaction, and reducing turnover.

Ertürk and Vurgun (2015) noted that organizations that have an HR strategy of education and training increase employees' commitment to the organization. According to the TWA, if employees have workplace satisfaction, then they tend to stay in their jobs (Dawis, 1980). If organizations take the time to enhance individual skills and abilities, this may enhance employees' satisfaction with their employer.

Investing in human capital. Nearly 90% (195 of 224) of respondents of Marincucci et al.'s (2013) survey cited lack of professional development and lack of training opportunities as the most important factors for workplace dissatisfaction. Every study participant referenced training as the most important change need for the preanalytic employees to be more successful. Additionally, nine of the 10 study participants noted that training or continuing education would have an effect on the retention of preanalytic employees. This concept aligns with what Marinucci et al. (2013)

finding that the success of quality laboratory services depends on the dedicated training of laboratory professionals and the building of their technical skills.

A consistent theme that came out of the interviews included the concept of investing in employees and making them feel a part of the team and process. The specimen management department experiences constant turnover and training employees take time, but when employees lack sufficient training, there can be serious consequences (Participant 6). Laboratory errors and delay of reporting laboratory results were examples of the serious consequences referenced by Participant 6. Other consequences Participant 6 noted included staffing issues, morale within the department, additional burden and stress to other employees to get the work completed, and complacency. Employers who invest in their employees make them feel part of the team and valuable. Participant 5 stated, “Knowledge is power, and anytime you can make them feel knowledgeable and good about what they’re doing helps all parties involved.”

Participant 9 said that “sometimes preanalytic employees are thrown into on-the-job training, and the success of that employee is dependent on who is training them and the depth of the training.” Participant 4 noted, “Unfortunately, with this job, there cannot be trial and error. They have to be trained right for quality laboratory testing and results.” Participants reported that preanalytic employees have to feel comfortable in their role because a point comes when they will get overwhelmed in the production-like process and become stressed. Participant 10 further elaborated, stating, “It’s almost like a domino effect because they’ll get stressed and quit.” The participants highlighted that turnover in the department influences adequate training and additional skill building. Participant 7

made a similar statement recognizing that “developing employees becomes difficult, as the operation goes into survival mode when constantly dealing with turnover and the secondary and tertiary effects that come into play.” Participant 8 felt that managing preanalytic employees was difficult because it seemed that the department was on a roller coaster dealing with the ups and downs of attrition.

Participant 10 believed that individual and consistent training with the same mentor could help a new employee transition into the organization. Having an identified mentor provides a point person and consistency in the training process. He noted, “There are a lot of things taking place in a laboratory and a new employee can be easily overwhelmed with the chaos.” Participant 4 thought smaller laboratories or operations may have an easier training or onboarding process because they are able to use an individual approach to training; but disagreed with Participant 10, noting that larger operations would not have that luxury or resources available to train a new employee adequately.

Participant 1 suggested that by investing in employees and developing adequate training programs, the organization will have the ability to teach employees and allow them to learn from their errors, which are components of success for preanalytic employees. Furthering those thoughts, Participant 2 said, “Management needs to take it a step further. It is important to bring employees into the fold, into the company, and train them up.” Numerous participants reported that there could not be a lack of standardization in the training. Serteser et al. (2012) reported that having standardized

training and the ability to learn from mistakes creates organizational best practices and can help minimize medical errors.

Medical laboratories that have trained employees and incorporate aspects of continuous quality improvement and risk management tools have increased quality outcomes (Plebani et al., 2013). Participant 3 believed increased quality outcomes result from consistency, and when the organization invests in employee training programs, additional skills develop. Specifically, Participant 1 noted that preanalytic employees need the training to extend beyond their immediate department.

Continuing education and skill development is critical for preanalytic employees, especially as laboratory tests change or if there is an update in specimen requirements (Participant 5 & 10). Participant 2 noted, "I think they need a ready resource to guide them if there are questions. They need daily guidance as continuing education to make them stable in their job." The concepts study participants addressed align with Dresner et al.'s (2014) finding that with 80% (179 of 224) of respondents reported regular opportunities to train and gain professional development as the highest incentive for remaining in their current job.

Standardized training. Seven of the study participants recognized that having a structured organizational training could help production quality and enhance patient care by increasing the accuracy of employee results, resulting in decreased medical laboratory errors. Participant 6 recognized that "the specimen management department is a high-risk, high-yield department for mistakes, and having a formalized standard training program is crucial." Reducing medical errors and improving patient safety has become a

concern in healthcare (Serteser et al., 2012). James (2013) reported that up to 440,000 Americans die each year from preventable medical errors, putting medical errors as the third leading cause of death in the United States behind heart disease and cancer. Organizations that have retention strategies and mitigation plans can help increase patient care quality and decrease medical errors (Serteser et al., 2012).

Vacancies in the specimen management department put additional strain on other staff and lead to additional medical errors (Participant 6). Having a standardized and formal training program were ideas generated from participants directly relating to retention strategies aimed to decrease employee turnover. Participant 1 recognized that if there is a good training program, employees are more likely to have buy-in and understand the importance of what they are doing. Participant 3 stated that employees need testing for competency and that providing proper training, with a syllabus, would help build a formalized training program. Seven of the 10 study participants discussed not having a standardized training program as an impediment to employee retention.

An additional concept Participant 1 recognized was that leaders need to address staffing models to promote skill knowledge and continuous education. This concept of promoting knowledge and education was addressed by Fonjugo et al. (2013), who stated that management teams need to have a good situational awareness of their workforce to help maintain and sustain knowledge and skills of their healthcare workers. Similar to Fonjugo et al.'s concepts, Participant 1 said that by having a standardized training program might give employees a sense of importance as the training program will make them feel more comfortable with their jobs and not stress over the production and

volumes of work that is required daily. Standardization of practices allows everyone in the department to do the same thing all the time, every time. “If there’s any room for them to make shortcuts, or do their own type of process, or make up something that they don’t understand the process, then that will happen. And that’s where we run into problems.”

Working in a laboratory is different than direct patient care and having employees understanding that every specimen represents a patient’s life (7/10 -70%)- Participants 1, 2, 3, 6, 7, 8, & 9) and building that into the organizational culture and the standardized training were ideas from Participants 2 and 8. Participants 3 and 6 (2/10-20%) brought up issues on the client side and recognized that formalized training to reduce errors of specimens coming into the laboratory would be helpful. “We're spending way too much time correcting their mistakes, calling clients to get clarification and fix errors on their end” (Participant 3). Creating a standardized training program for both internal staff and clients, laboratory errors and mistakes may decline (Participant 6). Similar to Participant 6, Participant 3 believed it is necessary to track the type of errors and mistakes happening on the client side to educate the preanalytic employees for what to look for and follow-up with the client to minimize those from occurring. Creating a specimen management mobile trainer could educate and teach clients, helping minimize errors with incoming specimens to the laboratory (Participant 3).

Participants 7 and 9 recommended that during formalized training, an important component to address with the staff was a better understanding of laboratory medicine, so preanalytic employees understood the gravity of their work and the bigger picture. By

incorporating how their work directly affects the results obtained in the laboratory shows their influence on patient care. Furthermore, Participant 7 had an idea of bringing in a patient or creating a video to share their story about how the laboratory results affected their life or medical outcome of their diagnosis.

Participant 2 believed that having a detailed and formalized training program would allow all employees the same on-boarding process and ensure that there is not a deviation from the process. As part of the standardized training material, Participant 9 recommended a formalized set of objectives, goals, and comprehensive assessments of the program. These tools need to be regularly updated and assessed to keep up with the changing dynamic field of laboratory science and what the organization needs. As managers conduct walkarounds within the department, they need to build continuing education tools and assessments to keep staff skills and knowledge updated (Participant 9).

Creating a standardized training program that incorporated the culture of the organization can help encourage and support employees to speak up and ask questions. By doing so, they understood the consequences of medical error and felt empowered and comfortable to speak up (4/10 or 40%- Participants 1, 2, 4, & 6). Increased autonomy and greater circle of influence builds organizational trust, credibility, and empowers lower-level employees (Ertürk & Vurgun, 2015).

Addressing employee needs are reinforcers from the TWA framework, which lead to employees feeling safe, autonomous, comfort, achievement, and recognition; leading to job satisfaction (Dawis, 1980). Building these reinforcers in an organizational training

program may help empower employees. According to Participant 8, some employees enjoy the predictable and stable workflow of the specimen management department, and that can bring comfort to those particular employees. Participant 8 concepts echo a few of the employee values noted by VanVoorhis and Protivnak (2012), referencing safety, autonomy, and comfort; which align with TWA.

Quality vs. Quantity. The principal accountabilities and responsibilities outlined in the preanalytic employee job description states the importance of accuracy and completing processes to laboratory protocol. Additionally, preanalytic employees need to identify and resolve problems appropriately during the accessioning and labeling process. Furthermore, the job description states "Exercises extreme caution through proper specimen handling procedures…" When reviewing online job postings, through multiple search engines and job placement websites, the job description and requirements outline workplace demands and needs, stating "Ability to maintain accuracy in a fast-paced environment."

With the production like process encourages employees to push the specimens through the process, rather than investigate a situation, and by doing so, it can create an error (Participant 3). Participant 1 believed the stress of specimen volumes pushes employees to get the work out, not allowing them to focus on quality, but rather quantity. Leveraging technology can increase accuracy and gain efficacy within the specimen management department, and this may lead to increased job satisfaction as employees feel comfortable with their job function and are successful with their tasks (Participant 4).

Having updated IT systems, technology, and automation were concepts addressed by half of the study participants (Participants 3, 4, 6, 7, & 8). Participant 3 discussed the importance of building fail proof systems, and using technology can help with the increased workloads, while enhancing quality outcomes in the laboratory, setting employees up for success. Using technology to minimize mistakes and interruptions, helps streamline the process throughout the laboratory (Participant 4). Additionally, Participant 4 believed that using technology better optimizes human resources; allowing individuals to optimize their attention on tasks needed by them rather than what a computer or software system could catch. To reduce preanalytic errors, both Participants 6 and 7 believed the new Laboratory Information System (LIS) that the organization is revamping, would enhance the quality of work coming from specimen management department.

To minimize the repetitive process and enhance quality outcomes, nearly half of the study participants believe in the value of rotating duties and functions within the department. Furthering the rotation concept, Participant 9 wanted employees to rotate in other areas of the laboratory. Rotating in the other departments allows the employee the ability to learn more about the testing and learn more about the issues with the testing. Additionally, Participant 9 stated “It gives them just one more place, one more step in the process to learn and grow.” By allowing preanalytic employees the opportunity to rotate in other departments it helps broaden their scope and comprehension of the testing, validating the importance of their work.

Emergent Theme Two: Managers Provide Recognition and Rewards for Employees

Rewarding and recognizing employees for their contributions by mangers is the second key theme that emerged from my review of the data. The managers were in agreement that timely feedback and recognition is key to improving retention of employees. Although all study participants addressed adequate employee compensation, the concept of recognition identified in the study was more than a financial incentive or pay increase. Participants regularly brought up the idea of having management visible, communicating, supporting, and interacting with staff. The number of times the code rewards and recognition appeared in the transcript of each interview is in Table 3 below.

Table 3

Codes relating to the Theme of Employees Need Recognition and Strive for Rewards

Participant	Pay	Reward	Management support	Recognition	Growth Opportunity
P1	2	1	3	4	3
P2	3	1	2	1	2
P3	3	2	6	5	1
P4	3	1	0	1	0
P5	3	0	0	0	0
P6	1	0	5	2	0
P7	2	0	2	1	0
P8	4	1	7	2	2
P9	3	1	6	3	2
P10	4	3	1	4	1
Totals	28	10	32	23	11

Other concepts relating to rewards and recognition participants identified include promotion opportunities and career ladder advancement. Participant responses

categorized under this theme were consistent with the research of Kim (2012) who identified variables of turnover intentions as being related to the following: (a) promotion opportunities, (b) training and development, (c) supervisory communications, (d) pay and reward satisfaction, and (e) family-friendly policies. Employees need to know that the organization considers them to be valuable and puts systems in place for career progression and advancement opportunities (Participant 1). Similar to what Participant 1 shared, Participant 2 believed that the jobs should have performance expectations and be graded out appropriately to the employees capabilities; allowing for career and pay advancement within the department. Additionally, Participant 2 believed if a career ladder or advancement opportunities existed with preanalytic employees, it might help with retention efforts. Some of the most successful people in the laboratory, reported by Participant 1, were individuals who started in departments like specimen management and moved their way up in the organization.

Most study participants recognized that employees are motivated by different rewards and recognition, similar to what Vurgun et al. (2015) reported. Vurgun noted an employees' behavior and attitude influenced their personal satisfaction of material and psychological rewards. Recognizing and rewarding employees needs, skills, and abilities are values among the TWA assessing an individual's satisfaction and dissatisfaction, which may interconnect to one's tenure at an organization (Dawis, 1980).

Management. Having a management team that recognizes the importance of being visible and being open to communicating to employees was important to eight of the study participants. Participant 1 recognized that "One thing that we could all do is

help train, train the employees. When an error occurs, we need to talk with them about what happened and why that was the problem." Participant 7 noted rapid constructive feedback would help employees learn from situations. Another important attribute is being available to employees to talk through situations, offering guidance, and mentorship. Participant 9 suggested, how do employees know they are doing well if management does provide constant communication and feedback.

Managers need to pay attention to front line operations and have constant and consistent interactions with employees. Participant 8 noted that employees who have a relationship with their manager are individuals who have an increased organizational buy-in. The organization has department daily huddles, led by management; to increase communication, check-in with staff, address questions, and safety concerns; and by doing so, this increases greater accountability with staff (Participant 8). Furthermore, Participant 8 noted that managers who pay attention to the little things and follow up on issues increase employee satisfaction and commitment. Participant 3 agreed with Participant 8, recognizing the need for management to circle back with employees, so they understand their errors, provide the communication, and loop closure between shifts.

Having management present and communicating with staff allows others to understand the bigger picture and help drive organizational results. Managers who are available, present throughout all shifts shows an organization commitment for results, and allows employees to ask questions and be mentored (Participant 7). On the other hand, Participant 3 believed that most supervisors in the specimen management department do not fully know the job requirements and demands the staff deals with each

day. Having the right managers and leaders within the department are critical to the success of the operation. Team building and knowing employees outside of the work environment is important (Participant 10). Managers need to show an interest with employees both personally and professionally. (Participants 8 & 10).

Participant 3 argued that a change needed to occur in management. An example is setting standards and expected attitudes and outcomes of employees within the department. Having a manager or supervisor on all of the shifts shows the employees that the organization supports their success. There are many layers to the management structure, but Participants 6 and 9 (2/10-20%) noted the importance of senior management conducting walkarounds; talking with employees.

When senior leaders of the organization take the time to talk with front-line employees, it offers an avenue for the employees to communicate with management and feel valued (Participant 6). Furthermore, Participants 1 and 6 stated that different managers throughout the organization should round interdepartmental to show support and recognize employees for their efforts. Participant 8 noted that departments take on the personality of their manager and it is important to have the right management in place.

Working in the laboratory can be an isolating job and managers who are present and interact with employees may help break up the repetitious work and production environment (Participant 9). Communicating with employees make them feel important and providing feedback may help them develop and grow within their position. Participant 9 stated “I'm trying to think how more to engage them, for them to feel value

in what they do. Some people require that. If they are not getting that fulfillment, then they see this as just a job, and we want someone who is engaged and sees value in what we are doing as an organization." Making employees feel valued, and a part of the team are responsibilities of management, and this directly relates to employee satisfaction and retention (Participants 8 & 9). Participant 8 indicated that it was important for managers to show support to other departments, "Leaders should show much they appreciate employees not only in their area but other departments. Recognizing others shows cooperation and the value of teamwork."

Recognition. Recognizing employees was a consistent attribute addressed by nine of the study participants. Participant 10 stated, "I think it's just recognition for the job that they're doing. They need to be valued, and feel like we value them." When employees are recognized for their work, a sense of achievement occurs (VanVoorhis & Protivnak, 2012).

Every study participant recognized that the specimen management department was critical to the success of the clinical laboratory. Changes that participants felt were necessary to improve retention included employee recognition. Participant 1 felt that managers appreciate preanalytic employees. Participant 3 had a different response, believing some managers view specimen management as a production and factory-like operation versus appreciating the thoughtful work they complete.

Both Participant 1 and 3 expressed that these employees need to feel that they are important to the business, and the success of the laboratory starts with their efforts. Specifically, Participant 3 stated, "Sometimes after a busy night they just need to hear

two simple words, thank you." Participant 3 recommended that the management team take 10 minutes after a busy night, when they arrive at work, to walk through the department, talk with the staff, and offer a sincere appreciation. "Many times a simple thank you can go a far" (Participant 3).

Similar to what Participant 3 expressed, Participant 4 believed that employee recognition would improve the success and retention of the specimen management department. The concepts that study participants addressed about recognition aligns with Davis (2013) study, reporting that increased employee morale, along with employee compensation, are two factors that lead to improved retention and job satisfaction among employees. Many of the participants recognized that it does not take a lot to show employees that you are thankful for their work or appreciate their efforts. Participant 1 stated having impromptu pizza parties or bringing in treats for the staff often has positive responses from the preanalytic employees.

Furthermore, Participant 1 believed that management, throughout the operation, needed to recognize the work and provide positive feedback to employees in specimen management. Participant 10 referenced the reward structure needs to include an acknowledgment to employees and ensuring they feel a part of the team. Specifically, "These employees have a tough job, and they are vital to our success. If we cannot take the time to acknowledge their efforts, then we should get out of the business" (Participant 10).

Not only recognizing individuals, but recognizing the entire department, all shifts, were ideas discussed by Participants 3, 6, and 10 when suggesting items to increase

morale and team dynamics. Recognizing the department, as a whole, helps build teamwork and cohesiveness among the employees and can help reduce interdepartmental tensions and disagreements (Participant 6). Participant 8 suggested that managers not have favorites, and should vary how they show appreciation to staff using various tactics such as praise in public, hand-written notes, and positive verbiage in employee appraisals.

Pay. Most of the study participants recognized that for the organization to retain trained employees, they need to have competitive salaries. All of the study participants brought up pay or financial incentives when asked what changes need to be made to improve the success and retention of the preanalytic employees. The complexity of the healthcare field is a reason why Participant 10 indicated that paying for performance is needed. Furthermore, Participant 10 stated that grading the pay structure is necessary, "So you can keep those people, and they don't just come in the front door and go out the back." Additionally, Participant 10, along with Participant 8 believed that the employees should have adequate shift differential. The evening and night shifts cover most of the work coming into the laboratory and finding qualified and motivated employees who are willing to work those hours are difficult. If the pay structure offsets the other factors, both Participants 8 and 10 indicated they could recruit better employees and increase morale and job satisfaction among the current staff.

Participant 2 believed reports and dashboards, reporting the accuracy of each employee, creates healthy competition, and you should pay for performance if the quality of the product is there. Although Participant 2 further noted, "You have to be careful

when paying for performance, because it encourages an assembly line approach, pushing the samples to the lab, regardless of mistakes." When talking about the department, Participant 4 didn't believe the employees were set-up for success, as the preanalytic employees are the least paid and least trained throughout the organization. Participant 4 focused on practices within HR to elevate the significance of their job function and look at strategies to increase morale, starting with pay and adequate training. Participant 5 echoed Participant 4 comments, recognizing that training and salary adjustments are needed. Additionally, Participant 5 suggested a performance bonus, so employees worked towards a specified goal.

Having an established pay scale and having skill sets attached to the pay scale were recommendations from Participant 9. The pay scale could act as a program to promote growth within the preanalytic employees position and motivate internal factors to recognize employees for their work (Participant 9). Additional comments about pay from Participant 9 include, "By providing a financial incentive to these employees it promotes them being a part of the team and they have skin in the game to ensure the accuracy of their work."

Hiring employees who have experience in specimen management is difficult and addressing the pay structure on a bi-year basis is needed to help ensure you are not losing qualified employees to competitors (Participant 7). Participant 3 believed "You get what you pay for." A career defined progression is helpful for employees, but having individualized incentive programs may have employees personally engaged and committed to the process (Participant 3). Having effective HR strategies to look at pay is

important, but Participant 8 stated that understanding why people leave helps create a comprehensive strategy.

The primary reasons why preanalytic employees leave the organization, according to Participant 8, include pay, lack of growth opportunities, and management not being supportive or invested in the employee or department. “Experienced employees cost more, but are worth the investment if you can find and retain them” (Participant 7). Participant 8 recognized “It’s not always about the pay, but that’s a big piece of it.” As characterized by P1, if the organization synchronizes the requirements of the job with the pay and performance turnover may reduce.

Emergent Theme Three: Emphasize the Importance of Patient Care

The third theme to emerge from the interviews with the managers relating to improving retention is emphasizing the importance of patient care for preanalytic employees. Employees need to recognize that every specimen in the laboratory correlates to a patient’s life. Participant 4 stated, “We are dealing with life and death situations. Medical providers need timely and accurate results to make appropriate decisions for these patients. I don’t think these employees understand the magnitude of what they do.” Parallel to Participant 4, Participant 2 believed most preanalytic employees didn’t understand the importance of their job, treating the specimens as a product versus a patient.

During the interviews, a handful of participants took their time and talked about the importance of the laboratory and how the laboratory directly correlates to patient care. Participant 3 stated,

> We are all about patient care, but we don't see the patients themselves. Just because we don't see them doesn't mean they are not here. They entrusted us with something precious, their life, and it is our obligation and duty to get it right. Every laboratory employee needs to get that. We have to be about the patient experience. And I don't want an employee working for me or this profession who doesn't get that.

Similar to what Participant 3 expressed, Participants 1 and 4 talked about the difference of working in a laboratory and the importance of relating each and every specimen to a patient's life. Participant 7 reinforced the need of having employees who recognized that the specimens center around medical decisions and the person's life they came from outside the laboratory.

Having employees who recognize their responsibility to the patient and the medical provider who entrusted the laboratory were concepts addressed by Participants 1, 4, and 8. Plebani et al. (2013) discussed objectives as quality indicators in the testing process, and the first objectives were being patient-centered. Participant 8 concepts aligned with Plebani et al. (2013), stating when they conduct their walkarounds they reinforce with employees "I can't make you care, but that blood or specimen could be your Mom, your son, or whoever you cherish most in your life. Don't forget that."

Multiple interviewees addressed the importance of employees need to have a buy-in and feel like the work they are doing is important to the business and overall patient care. Participant 10 expressed, "They need to know that what they are doing is important, it is vital for not just our operation where we are, but ultimately for the patient, the client,

and everybody involved." One of the interview questions talked about qualities of preanalytic employees and key attributes the managers described included those who had attention-to-detail, produced quality work, critical thinking skills, sense of ownership, and understanding the importance of their work.

Table 4

Codes relating to the Theme of There is a Patient Behind Every Specimen

Participant	Workplace Demands	Retention	Empowerment	Accuracy/ Patient Care	Recruitment
P1	3	1	2	2	1
P2	2	0	3	3	3
P3	1	2	2	4	1
P4	4	0	1	5	5
P5	5	1	0	1	0
P6	3	1	1	3	3
P7	3	0	1	1	1
P8	1	5	2	2	2
P9	3	0	0	1	0
P10	2	1	0	4	1
Totals	27	11	12	26	17

Empowerment. Empowering employees to make decisions was a critical component addressed by seven of the study participants. Having employees understand the importance of jobs and how that correlates to their actions results in quality clinical care. Participants 1 and 8 believed employees need to feel that they are important to the business and how they interact with others influence the organizational culture. Other concepts Participant 1 noted was a rapport with other staff and the feeling of buy-in to the department influenced empowerment of one. By feeling empowered, participant 2

recognized that if employees care and understand the gravity and importance of their work, they would be willing to stop and ask questions if uncertain.

Empowered employees show a sense of ownership and Participants 2, 3, 4, 7, and 8 recognized this as a necessary trait, so they understood that there was a patient behind every specimen. Additionally, participants believed employees who are engaged and invested in the work process, are more willing to do the right thing. Similar to what Ertürk and Vurgun (2015) reported, participant 8 recognized that psychological empowerment enhances employees' commitment to the organization. "They have to be engaged and know that there are consequences to a patient's life if a specimen is not handled with care. You want people who are interested in wanting to do it right" (Participant 3). Participants 2 and 3 recognized that empowered employee's feel valued and a part of the team. They understand ramifications of medical errors and the positive influence of proper medical results.

Empowered employees are more likely to have a vested interest and would be willing to meet the demands of the client (Participant 3). Finally, participant 6 emphasized that employees who are committed to the organization and felt empowered had personal traits to make decisions, be open to changes, understand the evolution of work processes, and the ability to think and train others. These thoughts are in alignment with the conceptual framework of the study, as TWA focuses on an individual and environmental interactions relating to both individual and employer satisfaction; relating to an employee's length of stay within an organization (Dawis et al., 1964).

Recruitment. Various studies that incorporated the TWA framework investigated and described the fit between a person and the environment (Lyons et al., 2014; Perkmen et al., 2012; Velez & Moradi, 2012). A recurring theme of the interviews pertained to recruitment and recruiting employees who are a right fit for the organizational culture. Participant 7 stated, "Recruiting the right person and right fit is the first step for the organization to find an invested employee who cares about the mission and who will provide quality clinical care to the patient and healthcare partners we serve." As characterized by Participant 2, recruiting is the first piece of the equation to attract the right person to the organization. Participants 2 and 7 identified what Dawis (1980) explained in TWA, that potential employees need the necessary skills to meet work requirements, and that person needs to know how to perform their job. Assessing an individual's skill and measuring aptitudes are concepts Dawis (1980) discussed to help employers recognize if that potential employee would have a good organizational fit.

The laboratory website and career placement websites show an overview of the organization and their vision. Specifically, "We seek employees that share our values and vision of providing physicians with the highest quality laboratory testing, delivered with personalize service, catering to the individual needs of the local medical community." Among the interviews, six study participants discussed the organizations values. Participant 1 stated, "We are more than a laboratory, we are a partner to the medical community, and we need employees who recognize the importance of the work we do."

Participant 4 identified that recruiting and hiring employees who are highly motivated, wanted professional growth, and care about making a difference were

important characteristics for the employees to have before they are hired. Furthermore, Participant 4 believed that the most important trait of a potential employee was someone who cared. Preanalytic employees need to understand the importance of the job, have the ability to pay attention to details, and focus on the task at hand (Participants 4, 6, & 10). Specifically, Participant 6 stated, "Laboratory medicine is different than other healthcare settings, we don't see the patients. Our version of customer service and excellence is done by focusing on that specimen and ensuring everything is correct." Most study participants believed that success for recruiting and retaining preanalytic employees was around the concept of employees understanding the significance of their work and the specific requirements of the job.

Workplace demands. Each study participant recognized workplace environment demands; identifying (a) repetitive work, (b) production, (c) boredom, (d) low autonomy, (e) poor ergonomics, and (f) stress as attributes to the job as a preanalytic employee. The sheer amount of work and repetitiveness of what they do was the biggest demand and stressor noted by Participant 1. Additional statements about workplace demands from Participant 4, noted:

> Tremendous environmental influences. The first being, the preanalytic areas are clearly a production, and as such each person has huge numbers of repetitive types of process as a production and it's very complex. Just with the influence alone with repetition concentration for long periods of time is a huge stress factor let along with ergonomics associated with repetition of keystrokes and moving in the same direction is a major issue.

Potential strategies to mitigate environmental workplace demands noted by Participant 4 included rotating job functions and responsibilities throughout the shift. By switching up job tasks, employees have the ability to retain focus, by not going on autopilot.

Participant 5 acknowledged that to keep a person's focus, you cannot have them do the same thing for eight hours in the same chair. Similar to what Participant 4 recommended, Participant 5 believes that rotating employees through different aspects of the department keeps their mind busy. “Their focus doesn't get just like an automaton where they might make a mistake because they're just hitting a production number” (Participant 5).

When recruiting and interviewing potential employees in the laboratory, Participant 9 referenced management needs to know and have the assurance that the candidate understood the job design and work conditions. “Many times we get employees who cannot handle the demands, and we waste significant resources trying to train them (Participant 9).” The job description of the preanalytic employee outlines environmental conditions, “Work involves frequent exposure to unpleasant working conditions or undesirable elements…” Similar to Participant 9, Participant 7 stated the importance of communicating the workplace demands to potential applicants, so they understand the workplace environment.

Participants 1 and 6 referenced variables that preanalytic employees have to deal with and one of the biggest issues are interrelationship conflicts among the department. “Working in the lab is difficult. The working conditions often have unfulfilled expectations of employees and those often quit (Participant 6).” When describing the

laboratory environment for preanalytic employees, Participants 7 and 10 recognized that the work is stressful, repetitive, and boring. The production like process has employees doing repetitive movements, and they have limited options for mobility (Participant 4).

Understanding how to improve an employee's workplace experience is a needed management strategy for organizations, identified from Velez and Moradi (2012). Similarly, multiple participants felt the organization needed to address the work environment demands for the employees. The primary concern was the ergonomics of the workstations and workflow in specimen management areas (Participants 2, 4, 5, 6, & 9). Specifically, Participants 4 and 5 recommended using Lean principles to look at potential areas and job functions to streamline workflows. Using technology or other process improvement principles allows the laboratory to build-in safeguards to reduce errors and ensure quality results (Participant 3). Incorporating technology was also a suggestion by Participant 4 to help optimize job functions within the department. Plebani et al. (2013) reported that using continuous quality improvement tools, such as Lean, help regulate and manage quality in the medical laboratory. Employees are successful if they have the right tools and attitude (Participant 4).

Retention. The organization conducts quarterly *stay interviews* with different questions and bi-yearly performance reviews that allow managers to have two-way communication with each employee (Participant 8). Additionally, the human resources department conducted a *Your Opinion Counts Survey.* Important items preanalytic employees needed, reported by Participant 8, included: (a) investments being made in laboratory equipment, technology, and supplies; (b) training; (c) relationship with their

supervisor; (d) buy-in to the organizational mission and vision, (e) recognition, (f) pay, and (g) communication with management.

To minimize turnover, Participant 8 believed the organization should focus on *Total Rewards*. Participant 8 elaborated and explained "Total Rewards is everything an employee perceives to be of value, which results in the employment relationship." Items included in a *Total Rewards* program include compensation, benefits, rewards, and other valuable options specific to an employee and the organization (Participant 8). A common thread among the interviews revolved around organizational commitment for investing in employees and management support. Study participants felt retention of employees is a result of identifying a proper fit of incoming employees, in and are concepts that need to be addressed among a retention strategy. Participant 5 identified,

> With the right recruitment, the right training, the right constant resource, the constant support, the constant respect from the team leader, I think it would make a positive influence and that it would keep the people here longer to know they're respected. We have invested interest in them, and we work hard to keep them.

To retain employees, the study participants recognized enhancements needed in the workplace and management to produce a quality product, but specifically, address employee engagement and turnover.

Business leaders have a difficult task making correct inferences about the dynamics of complex nonlinear systems (Sterman, 1994). Therefore, I created a feedback model to illustrate the casual relationships between external drivers, implementation of preanalytic employee strategy or impedances of preanalytic employee strategy, and how

that relates to trained employees (see Figure 1). The feedback model simplifies the understanding of the arrangement and nature of connections between elements in a system. The variables and relationships shown in the feedback model represent the multifaceted relationships between decisions and outcomes. Interactions among components within a feedback model create a causal loop structure, demonstrating a specific problem, not the entire system (Wikström, 2009).

Direct relationships (positive causal) are a change from X to Y in the same direction. Inverse relationships (negative causal) are a change from X to Y in the opposite direction. The feedback loop begins with external drivers for change such as retention strategies, employee turnover, avoiding medical errors, and ACA (see Figure 1). The feedback model flow moves for a need for preanalytic staffing for the clinical laboratory. An increase in the demand for preanalytic employees leads to an increased need for competent skills for retention of trained preanalytic staff (see Figure 1).

There are many factors that influencing the implementation of preanalytic employee strategy (see Figure 1). Creating a standardized training and education program, incorporating continuous feedback, recognizing and rewarding employees, and recruiting employees who are a right organizational fit are examples identified; directly linking to TWA (see Figure 1). The implementation of such strategies might lead to trained preanalytic employees (see Figure 1). Conversely, the presence of impediments mitigates efforts by decreasing the effectiveness of preanalytic strategy (see Figure 1). Identified impedances of preanalytic strategy include the training requirements may need

to change, lack of operational awareness, lack of management recognition of employees, and poor employee recruitment (see Figure 1).

As depicted in Figure 1, decreasing the effectiveness of preanalytic employee strategy negatively affects the culture change (see Figure 1). Within the context of the feedback model, the effectiveness of retention strategies for preanalytic employees not only creates a culture change, but increases awareness of job satisfaction and reduced turnover intention among employees. The direct relationship improves retention strategies and meets the needs of the healthcare community by training preanalytic employees (see Figure 1).

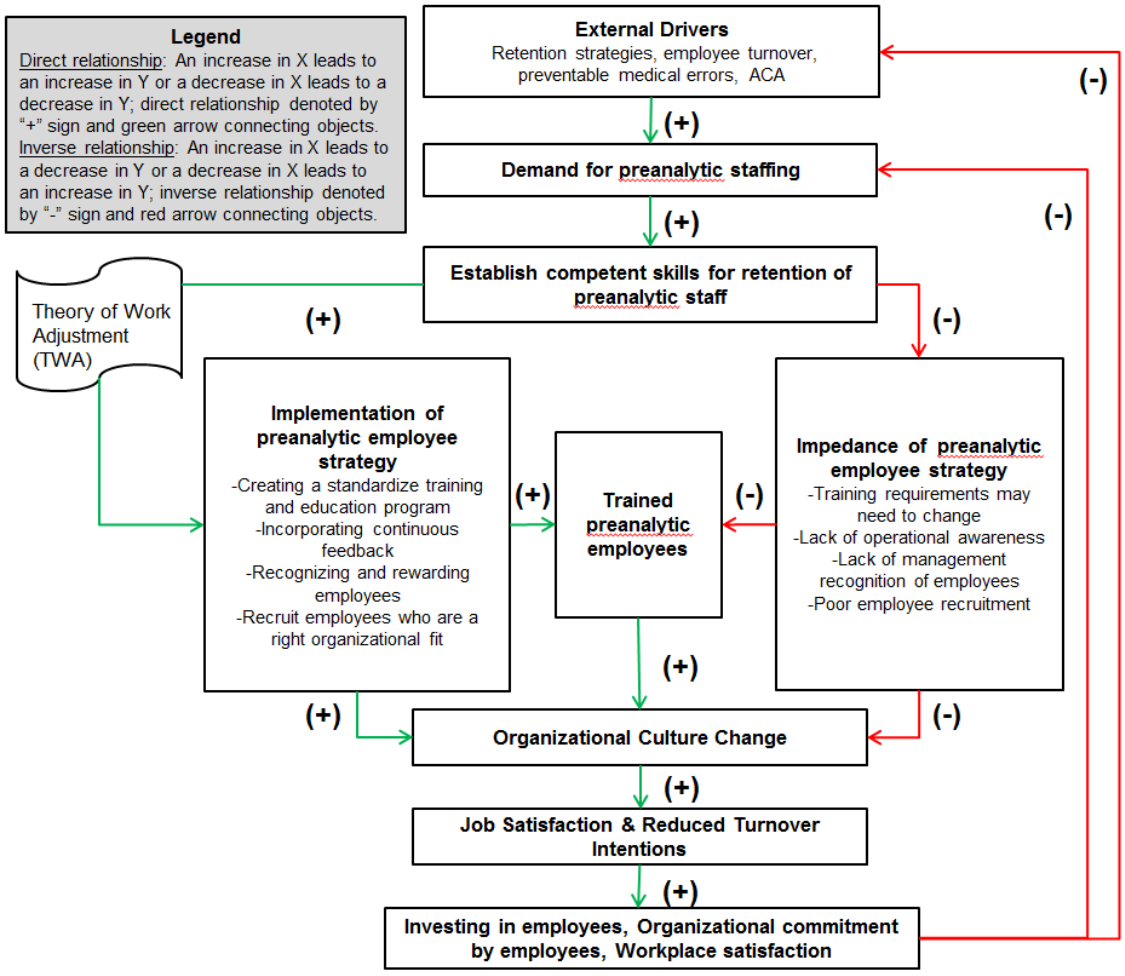

Figure 1. Feedback model. Model developed in consultation with D. L. Smalley and K. D. Gossett (2016).

Applications to Professional Practice

Concluding an exhaustive search for the literature review, no scholarly researcher has conducted a study that directly aligns to the present study. This effort began when I learned first-hand the turnover rates and limited retention strategies for a specified employee population in the clinical laboratory. To sustain a quality laboratory program, Marinucci et al. (2013) stated that retention strategies are necessary. High voluntary

employee turnover creates a loss in organizational profitability and productivity. The findings of this study are important to business managers who seek to create workforce strategies to retain trained preanalytic employees. These findings illustrate the perceptions of clinical laboratory managers who work in a community-based clinical laboratory in the mid-south United States.

Creating employee development and training programs enhance employees as stakeholders throughout the organization. Results indicate employees standardized training programs may increase job satisfaction, by investing in human capital. Additionally, the standardized training programs enhance patient care through accuracy in minimizing medical laboratory errors. To maintain trained laboratory staff, Fonjugo et al. (2013) expressed the necessity of having a standardized training program, to carefully plan, as lack of retention strategies have created workforce shortages in the laboratory industry. Marinucci et al. (2013) reported training and professional development opportunities were the most important factor for satisfaction in the laboratory workplace, reported by 90% of respondents (195/224).

About the importance of training, the study findings designated two important factors; the organization has a core training program, allowing for consistent training, along with individualized opportunities for feedback of mistakes and errors. The individualized feedback provides an additional quality structure not only to the employee but the organization; to help ensure future quality operations as laboratory errors decrease. Having an identified mentor provides employees consistency and a point-person to follow-up with questions or feedback. Study findings are consistent with

Cortelyou-Ward et al. (2011), who recommended laboratory managers promote skill knowledge for employees by encouraging training opportunities and mentoring.

Errors occur in laboratory operations, but if operational leaders and managers take the time to provide rapid constructive feedback it would allow employees to learn from mistakes. If the management team provides constant communication and feedback, employee's engagement, knowledge, and retention might enhance. Managers provide guidance and mentorship when they help employees learn from mistakes. Shore (2013) identified (a) achievement, (b) recognition, (c) the work about the job itself, (d) responsibility, and (e) advancement or growth within the organization as key factors of job satisfaction for employees. All of Shore's findings were concepts and themes identified in the study. Additionally, providing education and training opportunities for employees increases empowerment and enhances an employees' commitment to the organization (Ertürk, & Vurgun, 2015).

Rewarding and recognizing employees are necessary to engage them as part of the healthcare team. Having managers visible, communicating and interacting with staff helps drive organizational results by making them feel valued. These findings echoed Lan et al. (2013), emphasizing that increased job satisfaction occurred when employees recognized their work was important, and they felt valued.

Recognizing employees and relating their efforts back to improving patient care and the success to the laboratory helps employees feel valued. Milman and Dickson (2014) identified an employee's level of satisfaction, pay, and developmental training were predictors for retention among hourly employees. A component of the retention

strategy should include a competitive pay structure and use an incentive program that correlates to the quality and accuracy of the work completed by the preanalytic employee. Managers need to recognize and develop growth opportunities within the organization to retain skilled and talented employees. The study findings align with Kim (2012) results, which identified (a) promotion opportunities, (b) training and development, (c) supervisory communications, (d) pay and reward satisfaction, and (e) family-friendly policies as variables that influenced an employee's decision to leave the organization.

Empowering employees to make informed decisions and understand the significance of their job is an important aspect of a laboratory retention strategy. Laboratory managers need preanalytic employees to understand the significant of their work and how their actions influence the laboratory operation and clinical decisions for patients. Recruiting the right fit for the organizational culture is necessary and often overlooked due to specimen volumes or needs. Inabinett and Ballaro (2014) recommended matching organizational culture to employee values to increase retention. To improve business practices, laboratory managers need to recruit and hire employees who are motivated, looking for professional growth, and care about making a difference.

Business leaders who have a desire to improve retention will appreciate the results of this study. Researchers have previously demonstrated that employee turnover is driven by job satisfaction and organizational culture (Abii et al., 2013; Davis, 2013; Dawis, 1980; Inabinett & Ballaro, 2014; Lu et al., 2012; Lyons et al., 2014; Marinucci et al., 2013;Velez & Moradi, 2012). Understanding the relationships discussed in previous research and the results of this research are essential for managers who have a desire to

understand needed organizational concepts to sustain staff within the healthcare system. The results of this study could help business managers address retention strategies by incorporating standardized training and education programs, recognizing and rewarding employees for their efforts, and identifying important concepts to the job and organization during the hiring process to ensure a right fit.

Implications for Social Change

The implication for positive social change includes effective retention strategies for preanalytic employees in the laboratory. Organizations that have low turnover rates have a competitive advantage, reducing turnover costs, along with retaining employees who have specific skills, tacit knowledge, and abilities (Shaw et al., 2013). By helping clinical laboratory managers create retention strategies, this study has the potential to provide solutions, which might improve the quality of medical care by retaining trained, experienced employees. The development of retention strategies and policies might increase employee job satisfaction and reduce organizational costs about recruiting, replacing, and training of new employees. My hope is that the study will result in a dialog in which laboratory managers explore the business importance and implications of retention strategies, which may result in increased efficiency and quality laboratory services to the community due to continuity and productivity.

Recommendations for Action

The findings of the study have prompted the development of three recommendations for clinical laboratory managers to create workforce strategies to retain trained preanalytic employees. First, creating a standardized, core training program that

incorporates a feedback model from managers is necessary to grow and mentor front-line staff. Enhancing employees as a stakeholder increases job satisfaction by investing in human capital, increasing employee commitment, and increase production by enhancing patient care through accuracy.

Second, employees need recognition and strive for rewards. Creating a *Total Rewards* program addresses compensation, but additional benefits, rewards, and other aspects employees view as valuable to stay with an organization. Laboratory managers need to be visible and available for employees. Finally, laboratory managers need to recruit preanalytic employees who understand the demand of the workplace, the importance of their job and recognize that a patient's life depends on their timeliness and accuracy.

The results of the study and the associated recommendations are relevant to laboratory business leaders. Senior leaders and HR representatives responsible for creating retention strategies and policies could quickly utilize the results to make appropriate changes. As an agent of social change, I am fully committed to ensuring the distribution of these results at local, regional, and national conferences and publications. I will also make myself available to managers who seek clarification or understanding of these results.

Recommendations for Further Research

My study may be the first, where researchers are looking to identify workforce strategies clinical laboratory managers can use to retain trained preanalytic employees that may influence preventable medical errors, which is the third leading cause of death

in the United States. Recommendations for further research include follow-up metrics of implementation and outcome analysis. Metrics might include the length of employment, attrition rates, and the number of errors attributed to each preanalytic employees. One of the limitations of the study was a single site, small study sample. Expanding the sample size to multiple sites in future research might increase study participants viewpoints and opinions relating to retention strategies of trained preanalytic employees. Another research option exists in assessing generational differences and workplace expectations among different age groups in the workforce (e.g. Millennials, Generation X, Generation Y, & Baby Boomers). Subsequent research may result in different retention strategies based on generational differences.

An opportunity exists to broaden the study to apply same research approach to technical operations, as employment deficiencies of clinical laboratory technologists exist across the country. No clear answer is established to resolve the aging population of technologists, increased coverage required of laboratories by the Affordable Care Act, and the closing of more than half of the Medical Technology (MT) schools. Another option is comparing and contrasting retention strategies of non-technical and technical laboratory employees.

Reflections

As a healthcare executive, I need to understand strategic planning and how strategies can develop competitive advantages. Michael Porter said “Strategy is about setting yourself apart from the competition. It’s not a matter of being better at what you do- it’s a matter of being different at what you do.” The education and experience I

encountered through the DBA program make me different from what I do. I understand well-thought out research, and I have a desire to answer significant questions that influence patient care, employee, and customer satisfaction, along with strategies to ensure stability in the healthcare arena.

My doctoral study research originated describing the transferable skills of soldier's training to employment in the civilian healthcare sector. Over the course of the DBA process and rubric changes, my study changed three times. As a citizen-warrior, Officer in the United States Army Reserve, I look forward to finishing my initial research; identifying how military healthcare skills and education promote employment in the civilian healthcare industry post-military training.

I have always recognized the importance of human capital, and although I wasn't able to conclude the military research, I wanted to identify retention strategies that business managers can utilize to retain talent in the workforce. Based on my experiences, I would say my personal biases have not changed over the course of the study. I was surprised by the candor of some study participants who willingly shared their experiences. The significance of communication, management presence, recognizing and supporting employees, and the importance of fit were key concepts I learned during the exhaustive literature review and data analysis. Although extremely time and labor intensive, I enjoyed the data collection and data analysis portion of my research. I look forward to conducting additional qualitative research.

Summary and Study Conclusions

Leaders, who are interested in creating workforce strategies to retain employees, need information from this study. The findings of this study apply to professional practice and have implications for affecting positive social change. I provided some recommendations for action in this study. Organizations must embrace working with employees to be part of the healthcare team. The results of this study should inform clinical laboratory managers how to create retention strategies for trained preanalytic employees. Additionally, the findings of this study serve as a strong foundation for additional research on the topic of retention in healthcare.

Three themes emerged from the analysis of the data collected during this study. The themes identified were (a) enhancing employees as a stakeholder, (b) employees need recognition and strive for rewards, and (c) there is a patient behind every specimen. These themes align with previous research on topics of workforce strategies to retain employees. Additionally, these themes support the conceptual framework, TWA. The practical recommendations resulting from the study include (a) create a standardized training and education program that incorporates continuous feedback, (b) recognize and reward employees, and (c) recruit employees who are a right organizational fit.

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Appendix A: Reference Matrix Identifying Peer Reviewed and Non-Peer Reviewed Sources

	Peer Reviewed Sources within 5 years	Peer Reviewed Sources Outside of 5 years	Non-Peer Reviewed Sources within 5 years	Non-Peer Reviewed Sources Outside of 5 years	Total	References 5 years or less	Peer Reveiwed Sources	Percentage of Peer Review Sources within 5 years
Articles	109	8						
Books			4	6				
Total	109	8	4	6	127	113	117	86%

Appendix B: Confidentiality Agreement with Transcription Service

CONFIDENTIALITY AGREEMENT

Name of Signer:

During the course of my activity in collecting data for this research: Workforce strategies to retain trained preanalytic employees in clinical laboratories, I will have access to information, which is confidential and should not be disclosed. I acknowledge that the information must remain confidential, and that improper disclosure of confidential information can be damaging to the participant.

By signing this Confidentiality Agreement I acknowledge and agree that:

1. I will not disclose or discuss any confidential information with others, including friends or family.
2. I will not in any way divulge, copy, release, sell, loan, alter or destroy any confidential information except as properly authorized.
3. I will not discuss confidential information where others can overhear the conversation. I understand that it is not acceptable to discuss confidential information even if the participant's name is not used.
4. I will not make any unauthorized transmissions, inquiries, modification or purging of confidential information.
5. I agree that my obligations under this agreement will continue after termination of the job that I will perform.
6. I understand that violation of this agreement will have legal implications.
7. I will only access or use systems or devices I'm officially authorized to access and I will not demonstrate the operation or function of systems or devices to unauthorized individuals.

Signing this document, I acknowledge that I have read the agreement and I agree to comply with all the terms and conditions stated above.

Signature: **Date:**

Appendix C: Case Study Protocol and Procedure Guide

A. Case Study Introduction

B. Research Question

What workforce strategies do clinical laboratory managers use to retain trained preanalytic employees?

C. Case Study Interview Questions

1. What work environment demands influence the preanalytical team and how they may affect their job requirements?
2. How is the role of the preanalytical testing department important in relation to success of the clinical laboratory?
3. What changes would you as a team member need to make to improve the success and retention in the organization?
4. What changes or abilities would enable the preanalytic employees to be more successful?
5. What organizational changes would affect the retention of preanalytic employees?
6. What changes do you see needs to take place for the preanalytic employees?
7. What qualities does a preanalytical employee need to enhance quality patient care in the clinical laboratory?
8. If you adjusted the roles in the preanalytic team, how would it affect retention?

9. How could the scope of the preanalytic roles change to strengthen the role and make the job more satisfying?
10. What additional information can you provide about retaining preanalytic employees?

D. Conceptual Framework: Theory of Work Adjustment (TWA), Dawis, England, and Lofquist (1964)

E. Data Collection Procedures

1. Data to be collected from the review of public documents and the conduct of face-to-face, in-depth interviews with managers who work in a community-based clinical laboratory located in the mid-south United States.
2. Expected preparation activities to take place prior to conducting interviews
    i. Preparation of informed consent forms for each interviewee
    ii. Review and finalization of planned interview questions
    iii. Scheduling of conference room to conduct interviews

F. Data Collection Tools

1. Digital audio recordings
2. Researcher field notes
3. Case study database

G. Data Analysis Techniques and Tools

1. Inductive coding
2. Analysis tools: ATLAS.ti.7

H. Study Credibility and Dependability Methods

1. Credibility method
    a. Multiple data sources (construct validity)
    b. Assessment of rival explanations, research bias identification, and transcript checking (internal validity)
    c. Rich description of study sample population (external validity)
2. Dependability methods
    a. Case study protocol use
    b. Case study database creation

H. Procedural Guide

1. Overview of study
2. Presentation of the findings
3. Applications to professional practice
4. Implications for social change
5. Recommendations for action
6. Recommendations for further study
7. Reflections
8. Summary and study conclusions

Appendix D: Consent to Participate in a Research Study

Study Title: Workforce Strategies to Retain Trained Preanalytic Employees in Clinical Laboratories

Principle Investigator: Amber R. Phipps

Sponsor: None

Carefully review this consent document. The purpose of a consent document is to provide you with information to help you decide whether you wish to participate in this research. You are invited to take part in a research study to understand employee engagement and disengagement. It is important for you to ask questions and understand the research risks, benefits, and alternatives. Amber R. Phipps; MBA, Vice President, Quality and Patient Safety, Children's Hospital and Medical Center, is conducting the study in pursuit of a Doctor of Business Administration (DBA) degree from Walden University. The study has no relationship to Amber R. Phipps professional activities and affiliations.

Please note:

- **You are being asked to participate in a research study**
- **Carefully consider the risks, benefits, and alternatives of the research**
- **Your decision to participate is completely voluntary**

INFORMATION ON THE RESEARCH

Why are you being asked to take part in this research?
You are being asked to volunteer to participate in this research study because you are a manager overseeing or directly interacting with preanalytic employees in a community based clinical laboratory. The eligibility criteria for this proposed study include (a) person over the age of 18, (b) required employment within a community-based medical laboratory, (c) have worked at the community-based clinical laboratory for at least one year, (d) serve in a management position, and (e) successfully addressed retention problems of preanalytic employees they are responsible for.

Why is the study being done?
The purpose of the study is to identify workforce strategies managers can use to retain trained preanalytic employees in clinical laboratories.

How many people will take part in the study?
About 10 people will take part in the study.

What is involved in the study?
If you agree to be in the study, you will be asked to:

- Agree to an interview conducted outside of your normal work shift

- Agree to having the interview professionally audio taped for later transcription and analysis
- Agree to a follow-up interview should any clarification of the transcribed data be required.

How long will you be in the study?
Your participation in the study will last 30-45 minutes for the initial interview and member checking. You will be asked to be available for any follow-up interview questions. If you would like to receive a copy of your transcript to check for narrative accuracy please let the researcher know.

RISKS AND DISCOMFORTS

What are the risks of the study?
Being in this type of study involves some risk of minor discomfort encountered in daily life such as fatigue, stress, or becoming upset should sensitive topics arise for discussion. Therefore, participation in the study can involve minimal risk of psychological stress or inconvenience. The researcher will endeavor to ensure the potential for personal discomfort is kept to a minimum during the interview process.

Privacy and Confidentiality:
There are no physical risks associated with the study. However, the potential risk of loss of confidentiality due to an electronic device being lost or stolen. Every effort will be made to keep your information confidential, however, this cannot be guaranteed. A digital electronic device will record the interviews. Your name will not be recorded. The recording will include only a number (e.g. participant 1). You can refuse to answer any question, and you can take a break at any time during the interview.

No identifying information will appear in the study. The researcher is the only person who will know your identity and will not reveal your identity, or the identity of the research facility, for any reason. Your comments or views will not be shared in any way disclose your identity. Electronic data, including a key, known only to the researcher will link your name to a generic number (code), and stored on an encrypted, removable flash drive. Data will be backed-up on a secure network drive, accessible only to the researcher. Electronic and printed material will be locked in a secured cabinet when not in use. The raw data, identifying key, audiotapes, and any saved material stored will be destroyed immediately after the review of the transcripts. At the conclusion of the study, the transcripts will be destroyed 5 years after the conclusion of the study, in accordance with the program requirements of Walden University.

BENEFITS

Are there benefits to taking part in the study?
Participation in the study will provide you with the opportunity to share your knowledge, thoughts, and experiences. Your feedback could affect business practices by understanding what experiences contributed to a sense of engagement or disengagement in a work setting. All study participants will have equal access to study results. A one to two-page summary is provided to study participants after completion of the study. Additionally, you will receive a link to the published doctoral study upon approval and publication in ProQuest.

ALTERNATIVES

What other options are there?
The other alternative is not to participate in the study**.**

COSTS

What are the costs?
There are no costs to you for participation in this research study. You will not be provided with any thank you gifts, compensation, or reimbursement in exchange for your voluntary participation in this study.

VOLUNTARY PARTICIPATION

What are your rights as a participant?
Taking part in the study is voluntary. You will be told of any new, relevant information from the research affecting your health, welfare, or willingness to continue in the study. You can choose not to take part or leave the study at any time. Withdrawing from the study will not result in any penalty or loss of benefits to which you are entitled.

QUESTIONS

Whom do you call with questions or problems?
Questions you have about your rights as participants should contact the university's Research Participant Advocate at 612-312-1210.

Walden University approval number for the study is 03-31-16-0323432, and it expires on March 30, 2017.

SIGNATURE

Statement of Consent

I have read and have had verbally explained to me the above information and have had my questions answered to my satisfaction. I understand my participation is voluntary and I can stop my participation in the study at any time. Signing this form does not waive any of my legal rights. I understand a copy of this consent will be provided to me. By signing below, I agree to take part in this research study.

_____

Printed name of Participant

_____ _____

Participant Signature Date

Appendix E: Email Participation Invite

Address Line:

Subject Line: Research Participation Invitation:

Email Message Body:

Dear,

Walden University Institutional Review Board (IRB) has approved the following study:

Workforce Strategies to Retain Trained Preanalytic Employees in Clinical Laboratories

You are invited to take part in a research study that examines *what strategies do clinical laboratory managers use to retain trained preanalytic employees.* The purpose of this study is to identify workforce strategies clinical laboratory mangers use to retain trained preanalytic employees. Criteria is that you must be over the age of 18, require employment within a community-based medical laboratory, have worked at the community-based clinical laboratory for at least one year, serve in a management position, and successfully addressed retention problems of preanalytic employees. If you are interested in learning more about the study or willing to participate, please contact me.

Sincerely,

Amber R. Phipps

Appendix F: Letter of Cooperation

Organization Address

Date

Dear Amber R. Phipps,

Based on my review of your research proposal, I give permission for you to conduct the study entitled 'Workforce Strategies to Retain Trained Preanalytic Employees in Clinical Laboratories' within our organization. As part of this study, I authorize you to work with the Human Resource (HR) Director to identify potential study participants that match the study criteria. You also have permission to use the conference room to conduct face-to-face interviews. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: sign a letter of cooperation, supporting the use of the conference room and HR will provide contact information of potential study participants. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

President, CEO Signature Block

Walden University policy on electronic signatures: An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically. Electronic signatures are regulated by the Uniform Electronic Transactions Act. Electronic signatures are only valid when the signer is either (a) the sender of the email, or (b) copied on the email containing the signed document. Legally an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. Walden University staff verify any electronic signatures that do not originate from a password-protected source (i.e., an email address officially on file with Walden).

Appendix G: Notice of Withdrawal

I would like to withdraw from your research study regarding strategies pertaining to retention of preanalytic employees in clinical laboratories effective immediately.

Signed: Date:

PRINT FULL NAME

Appendix H: National Institutes of Health (NIH) Web Based Training Program Certificate

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Amber Phipps** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 01/14/2012.

Certification Number: 827169.